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Atypical Seminoma—Histologic Features, Immunohistochemical Characterization, and Correlation with Survival

MARY F. LACHMAN, M.D., ANDREW RICCI, JR., M.D., CARL PEDERSEN, B.S., AND RICHARD W. CARTUN, PH.D.

ABSTRACT—Classical seminoma and embryonal carcinoma are two points in the spectrum of histologic differentiation in testicular germ cell tumors. The validity of an intermediate category, ie, atypical seminoma (AS) is questionable. Histopathologic and clinical data on 42 patients treated for primary testicular germ cell tumor from 1975 to 1985 were reviewed. Twenty-seven cases were identified as classical seminoma and nine were embryonal carcinoma. The remaining six cases were somewhat problematic to classify, combining the growth pattern of seminoma with cytologic features of embryonal carcinoma. Immunocytochemically, four of these tumors suggested some progression towards the embryonal carcinoma phenotype on the basis of cytokeratin expression. Survival for classical seminoma, AS, and embryonal carcinoma were 90%, 80%, and 63% respectively (mean follow-up, 8.6 years). Although the survival differences were not statistically significant, when considered with morphologic and selected immunocytochemical data, they tend to support the concept of an AS as an intermediate lesion between classical seminoma and embryonal carcinoma.

Introduction

ADULT testicular germ cell tumors are traditionally divided into seminomas and nonseminomatous types. Of the nonseminomatous germ cell tumors (NSGCT) composed of a single histologic type, embryonal carcinoma is the most common. Some authors believe classical seminoma and embryonal carcinoma represent two points on a continuum of neoplastic differentiation,[1,2] with AS representing an intermediate point of differentiation.[3] However, except for the criterion of more than three mitotic figures per high power field proposed by Mostofi, a histologic definition of atypical (anaplastic) seminoma has remained elusive and the clinical value of such an intermediate category has been questioned.[4] Upon reviewing a series of 45 cases indexed as testicular germ cell tumor, six seminomas were encountered which were atypical in that they combined some cytologic features of embryonal carcinoma, with the solid growth pattern of seminoma. We report the histopathologic, immunocytochemical features and clinical data on these AS and compare them with the findings for classical seminoma and embryonal carcinoma.

Materials and Methods

Patient Selection.—As part of a Hartford Hospital Tumor Registry audit, the clinical and histopathologic characteristics of 45 patients who were diagnosed with testicular germ cell tumors between 1975 and 1985 were reviewed. Three cases were excluded from subsequent consideration on the basis of the pathologic review. These cases consisted of a mature teratoma, an endodermal sinus tumor, and a case that was reclassified as a malignant lymphoma. The clinical records from the remaining 42 cases were then reviewed.

The patients were between 15 and 72 years of age (mean = 35 years). Forty of the 42 patients (90%), presented with testicular mass or pain. Patient's tumors were right sided only (n=12), left sided only (n=26), or bilateral (n=2). In 40 patients (95%) diagnosis was made at the time of orchiectomy. Eleven of these 40 patients (27%) also underwent retroperitoneal lymph node dissection. In two patients (5%) the diagnosis was made by biopsy of a metastatic site. Twenty-nine of 42 patients (69%) re-

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MARY F. LACHMAN, M.D., Department of Pathology, Yale University School of Medicine, New Haven; ANDREW RICCI, JR., M.D., CARL PEDERSEN, B.S., and RICHARD W. CARTUN, Ph.D., Departments of Pathology, Hartford Hospital, Hartford.

Table 1.—Characteristics of Testicular Germ Cell Tumors (n=42)

Patient Characteristics	Classical	Tumor Type Atypical	Embryonal	Total
Number of patients	27 (100%)	6 (100%)	9 (100%)	42 (100%)
Stage I	21 (78%)	3 (63%)	5 (63%)	29 (69%)
Stage II	3 (11%)	1 (17%)	1 (13%)	5 (12%)
Stage III	3 (11%)	2 (33%)	3 (37%)	8 (19%)
Mean tumor size (cm)	6.6	5.5	4.1	4.6
Survival (mean follow-up 8.6 years)	19/21 (90%)	4/5 (80%)	5/8 (63%)	82%

ceived postoperative radiation therapy and 9/42 (21%) received chemotherapy. All who received chemotherapy were originally diagnosed as having embryonal carcinoma.

Twenty-nine patients had stage I disease confined to testis and adnexa, five had stage II disease showing metastatic disease to the retroperitoneal lymph nodes, and eight were considered stage III disease with metastasis beyond the retroperitoneal lymph nodes (see Table 1).

Hematoxylin-eosin slides were available for review in all cases. In combination with criteria proposed by Mostofi[4] and atypical features outlined by Reuter,[5] additional characteristics appear to define a histologic category of atypical seminoma intermediate between classical seminoma and embryonal carcinoma (Table 2). On the basis of these criteria, 27 of 42 patients (64%) had classical seminoma (Fig. 1), six of 42 (14%) had AS (Figs. 2 and 3), and nine of 42 (21%) had embryonal carcinoma (Fig. 4). The group of AS were selected for further immunocytochemical characterization along with representative comparison groups of classical seminoma (n=4) and embryonal carcinoma (n=4).

Immunocytochemistry. —Tissue sections were probed with antibodies directed against placental alkaline phosphatase (PLAP), the beta subunit of human chorionic gonadotropin (BHCG), cytokeratins (CK), and alpha fetoprotein (AFP). Our immunocytochemical procedure has been described in detail elsewhere.[6] Briefly, 5-μm tissue sections cut from paraffin blocks were placed on glass slides coated with 0.1% poly-L-lysine to promote section adhesion. Following routine deparaffinization and rehydration, sections were incubated with the appropriate dilution of primary antibody overnight at 4°C (Table 3). Tissue sections to be labeled with the CK cocktail were predigested with 0.4% pepsin (Sigma Chemical Co., St. Louis, MO) in 0.01 N HCl to enhance immunoreactivity. The CK cocktail contained the following mixture of antibodies diluted as indicated: AE1/AE3 (Boehringer Mannheim, Indianapolis, IN) 1:50,000, CAM 5.2 (Becton Dickinson, Mountain View, CA) 1:2,000, and MAK-6 (Triton Biosciences, Alameda, CA)

Table 2.—Histologic Features Differentiating Between Sminoma, Atypical Seminoma, and Embryonal Carcinoma

Histologic Features	Classical Seminoma	Atypical Seminoma	Embryonal Carcinoma
Cellular arrangements			
Sheets/lobules	X	X	0
Acinar	(In situ seminoma)	0	X
Tubular/papillary	0	0	X
Cell-cell relationships	Distinct	Pleomorphism, cell overlap	Indisting, pleomorphism
Cytoplasm	Clear, granular	Amphiphilic	Amphophilic, vacuolated
Nuclei	Central, prominent nucleoli	Large, irregular	Irregular, round
Mitotic figures	V	3 or more/HPF	Numerous
Giant cells	X	0	X
Lymphocytic infiltrate	X	Slight to none	0
Granulomatous reaction	X	0	0
Hemorrhage/Necrosis	V	V	X

Key: X=Present; V=Variable; 0=Absent

1:500. The PLAP (DAKO Corporation, Carpinteria, CA) and BHCG (CAPPEL, West Chester, PA) antibodies were used at a dilution of 1:5,000. The AFP (DAKO) polyclonal antibody was used at dilution of 1:10,000. A sensitive detection system consisting of biotinylated secondary antibodies (horse antimouse for BHCG and CK cocktail, and goat antirabbit for AFP and PLAP; Vector Laboratories, Burlingame, CA), streptavidin-horseradish peroxidase (Jackson Immuno-Research, West Grove, PA), and aminoethylcarbazole were used sequentially to produce a visible end product indicating the presence of the antigen. Tissue sections were scored as negative, 1 + (faint), 2 + (distinct), or 3 + (intense) and the immunoreactivity was characterized as scattered, patchy, or diffuse (Table 4A and 4B).

Results

Follow-up and Survival.—Of the 42 patients, 28 were living (one with recurrent disease), six had died (five dead of disease, one dead of other causes), and eight were followed briefly then lost. Mean follow-up time for those individuals still living was 8.6 years. The overall survival rate for the entire group with follow-up was 82%. When subclassified by histologic subtype disease-free survival (all stages) was 90% (19/21) for the classical seminoma group, 80% (4/5) for the atypical seminoma group, and 63% (5/8) for the embryonal carcinoma group. The survival differences between the three groups were not statistically significant.

Immunocytochemistry (Table 4A and 4B).—All but one of the atypical seminomas showed diffuse immunoreactivity with PLAP (Table 4A). The remaining case showed patchy labeling. Four of seven specimens (from six patients) were also immunoreactive with the CK cocktail. In

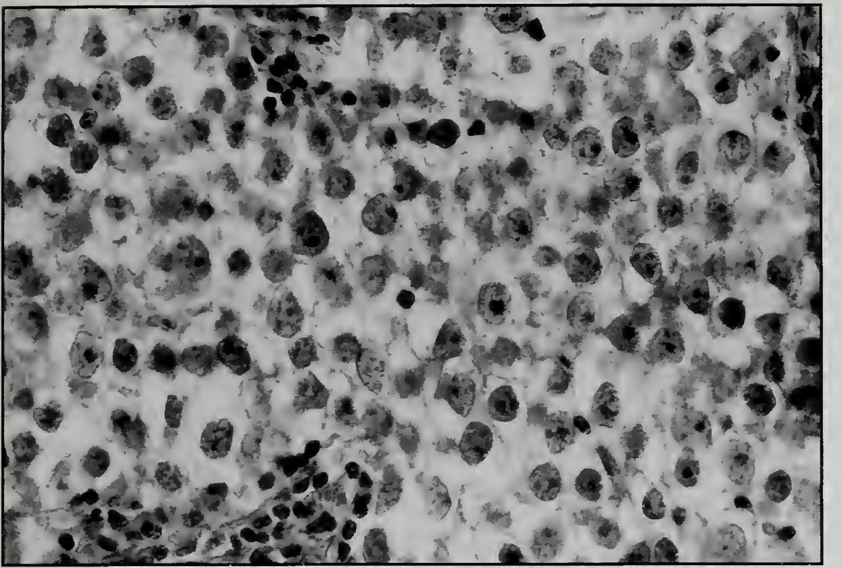
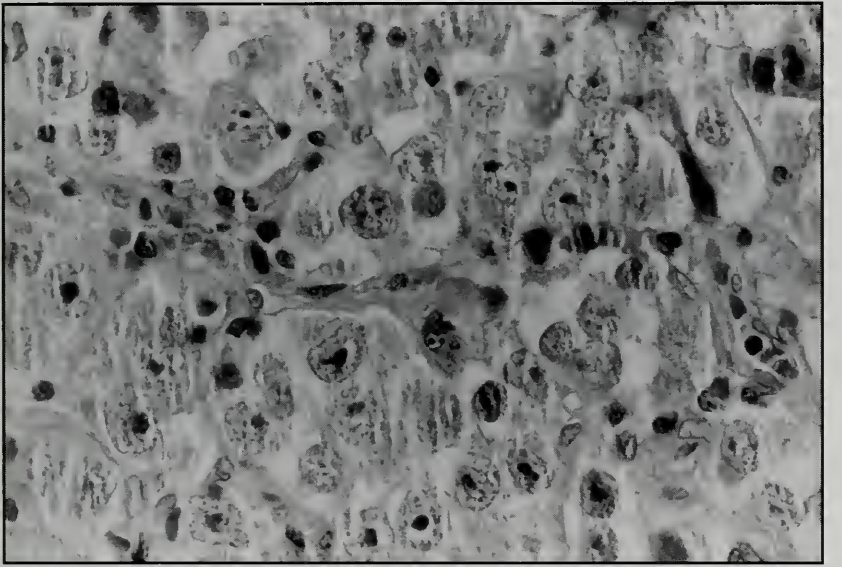


Figure 1.—Classical seminoma cells are uniform with distinct cellular outlines and clear cytoplasm. Nuclei are central with prominent nucleoli. A lymphoid infiltrate is present (H+E, original mag 500x).



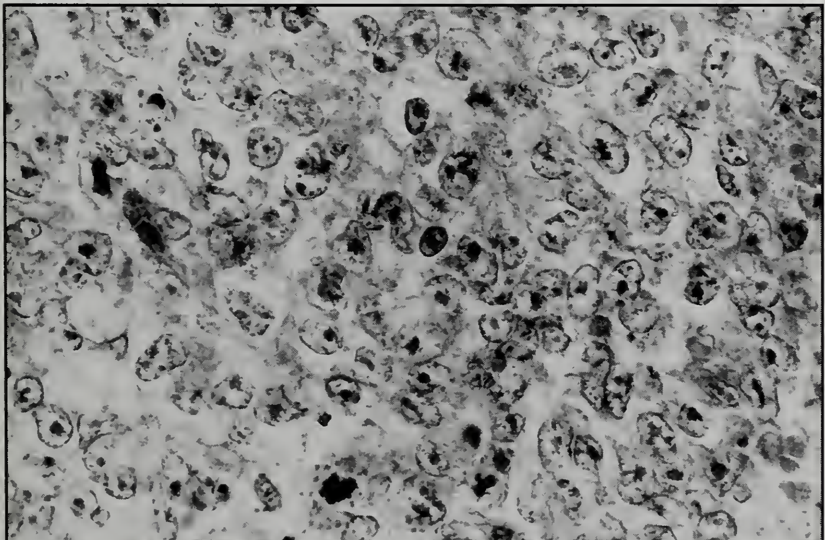


Figure 2 and 3.—Atypical seminoma (cases #1 and #2). Cells are larger and more pleomorphic, with less distinct cell borders and a greater tendency toward cellular and nuclear overlap. Cytoplasm is granular and/or amphiphilic. Vesicular nuclei display prominent irregular nucleoli. Lymphoid infiltrate is less prominent or absent (H+E original mag 500x).

Table 3.—Antibodies Used in Study

Antibody	Source	Dilution	Tissue Section Predigestion
PLAP	DAKO Corporation (Carpinteria, CA)	1:5,000	No
AFP	DAKO Corporation (Carpinteria, CA)	1:10,000	No
BHCG	Cappel (West Chester, PA)	1:5,000	No
CK Cocktail:			
CAM 5.2	Becton Dickinson (Mountain View, CA)	1:2,000	Yes
AE1.AE3	Boehringer Mannheim (Indianapolis, IN)	1:50,000	(0.01 N HC1)
MAK-6	Triton Biosciences (Alameda, CA)	1:500	

most of these cases the pattern was scattered 2+ to 3+ immunoreactivity (Fig. 5), however, in one case, the labeling was 1+ to 2+ and diffuse (Fig. 6). None of the cases demonstrated reactivity with anti-AFP. Positive immunostaining for BHCG was seen in an occasional cell interpreted as a syncytiotrophoblast. Comparative immunoreactivity for representative cases of classical seminoma (n=4) and embryonal carcinoma (n=4) are given in Table 4B. Briefly, classical seminoma was diffusely reactive with antibodies to PLAP, but nonreactive with all other reagents, whereas embryonal carcinoma was diffusely reactive with anticytokeratin, focally reactive with anti-AFP, and nonreactive with anti-BHCG antibodies. Embryonal carcinoma was also immunoreactive with anti-PLAP, although labeling was less intense and more patchy in distribution as compared to classical seminoma.

Table 4A.—Immunocytochemical Results for Atypical Seminoma

Case No.	PLAP	AFP	BHCG	CK
1	3+ D	—	—	2+ SC
2	1+ to 3+ P	—	—	1+ to 2+ D
3	2+ to 3+ D	—	—	—
4	2+ to 3+ D	—	—	3+ S
5*	3+ D	—	—	—
6*	3+ D	—	—	—
7	3+ D	—	—	3+ S

Table 4B.—Immunocytochemical Data for Classical Seminoma and Embryonal Carcinoma

Histology	PLAP	AFP	BHCG	CK
CS (N=4)	2+ to 3+D	—	—	—
EC (N=4)	1+ to 2+ P	1+ F*	—	2+ to 3+ D

*single case; others were negative

Key: D=diffuse; P=patchy; S=scattered occasional cells; PLAP=placental alkaline phosphatase; AFP=alpha fetoprotein; BHCG=Beta subunit of human chorionic gonadotropin; CK=Cytokeratin cocktail; *represents two separate tumors from one patient.

Discussion

The developmental pathways of testicular germ cell tumors is a matter of controversy. Most pathologists would agree that tumorigenesis proceeds from intratubular germ cell neoplasia (ITGCN). Certainly ITGCN often precedes or accompanies seminoma or mixed germ cell tumor. Disagreement arises over whether seminoma represents an endpoint in the terminal differentiation of a neoplastic precursor or whether it occupies an intermediate position on a continuum that has the potential to develop other nonseminomatous germ cell tumor (NSGCT) components (Fig. 7).

Clinical data with respect to survival, response to therapy, tumor markers, and prognosis appear to favor the former dichotomous separation of seminoma and NSGCT. Histologically, however, a considerable percentage of testicular tumors combine both seminomatous and nonseminomatous elements, favoring the alternate theory of sequential tumor progression. Friedman[7] has long been a proponent of this latter theory. Although perhaps not as easily visualized as the concept of two distinct neoplastic pathways, one for seminomas and one for NSGCT, this theory does have merit.

Since seminomas cannot be grown *in vitro* and an experimental model does not yet exist, DNA flow cytometry and cytogenetics have been employed in attempting to evaluate these tumors. Flow cytometric DNA studies have demonstrated aneuploidy in the large majority of testicular germ cell tumors.[8] Seminomas are often near triploid with a median DI in one study reported as 1.64.[9] Independently Oosterhuis et al[10] and El Naggar and coworkers[9] demonstrated that progression of seminoma to nonseminoma is accompanied by a decrease in the DNA index. Cytogenetic analyses of seminomas have shown modal chromosome numbers ranging from 63 to 112.[18] The most common marker chromosome in testicular germ cell tumors is isochromosome 12p (i12p).[19,22] Net loss of DNA from ITCGN through seminoma to nonseminoma may be partially due to activation of the K-ras protooncogene on chromosome 12 during the formation of i12p.[10] Further, Damjanov[1] has suggested that

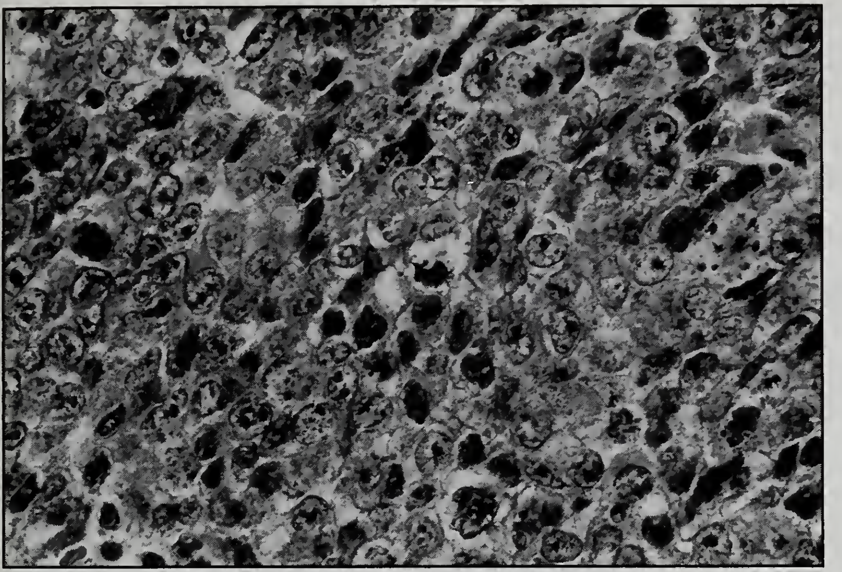


Figure 4.—Embryonal carcinoma. Cells are large exhibiting marked pleomorphism; cellular membranes are blurred rendering a syncitial-like growth pattern. Cytoplasm is amphiphilic to basophilic; there is marked nucleolar pleomorphism as well. (This photomicrograph was taken from a solid area of an otherwise typical embryonal carcinoma (H+E, original mag 500x).

progressive deactivation of tumor suppressor genes may be responsible for additional deletions of chromosomal DNA. The retinoblastoma gene[21] and p53 gene[20] are both tumor suppressor genes, occurring on chromosomes 13 and 17, respectively. These chromosomes are among those that are consistently under-represented in seminomas.[19] These chromosomal studies seem to support the theory of sequential tumor progression from seminoma to nonseminoma (primarily embryonal carcinoma), and at least open the door for consideration of a transitional tumor, ie, "atypical" seminoma. Established histopathologic criteria for such a tumor are elusive, however, and the clinical relevance of AS as an intermediate point between classical seminoma and embryonal carcinoma is, to say the least, controversial. Nevertheless there are clearly a group of seminomas, accounting for approximately 5% of cases, which behave poorly.[2] The incidence of AS has been described as approximately 10% by those authors who believe in the entity.[4,11,12] Several authors have reported a tendency toward more aggressive behavior with earlier dissemination[12] and poorer survival[11,13] relative to classical seminoma. Bobba et al,[13] reviewed the five-year survival rates of patients with AS and found them to fall between 43% and 95%. In his series[13] the relaps- free survival rate at 10 years for CS was 94% compared with AS (70%). This was apparently the trend in our series as well with respective disease-free survival rates for CS, AS, and EC of 90%, 80%, and 63%. Fully 78% of our CS were stage 1 at presentation, whereas only 50% of AS and only 63% of EC were similarly staged. This is consistent with the notion of more virulent biologic potential of AS as compared to CS. However, since different authors use different criteria for establishing a diagnosis of AS, survival comparisons between studies may not be meaningful. In addition, the widespread use of cisplatin-based combination chemotherapy has dramatically improved the prognosis of pa-

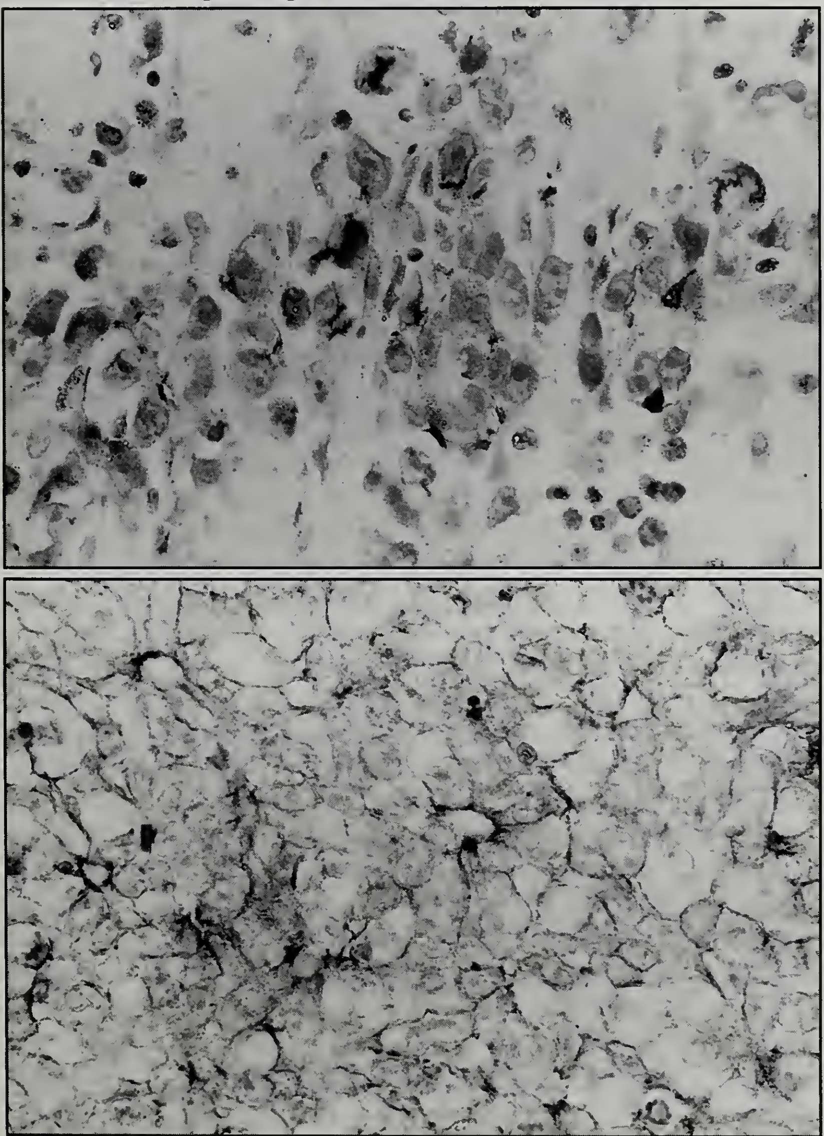
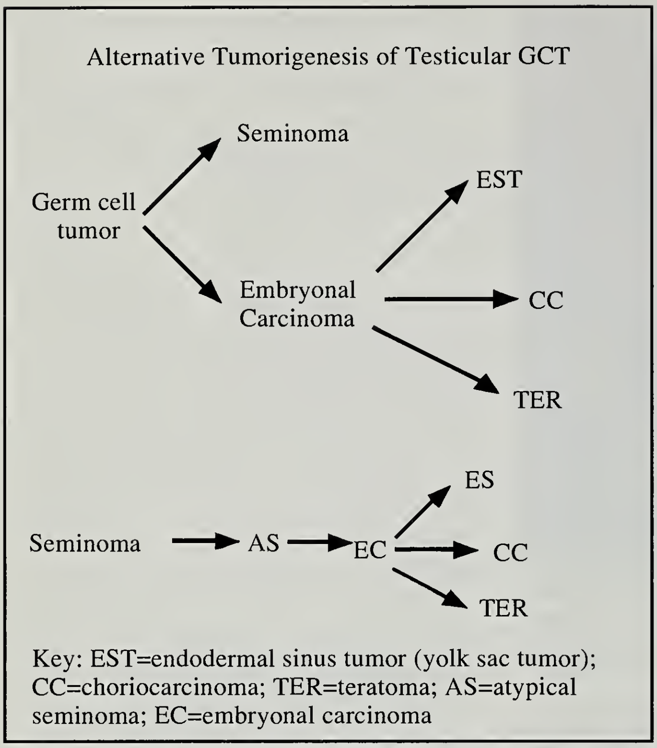


Figure 5 and 6.—Atypical seminoma cytokeratin immunocytochemistry (cases #1 and #2) showing 2+ scattered and 1-2+ diffuse immunoreactivity respectively (original mag 500x).


Alternative Tumorigenesis of Testicular GCT

Key: EST=endodermal sinus tumor (yolk sac tumor); CC=choriocarcinoma; TER=teratoma; AS=atypical seminoma; EC=embryonal carcinoma

Figure 7.—Alternative tumorigenesis of testicular GCT. Classical dichotomous pathways for seminoma and nonseminoma *vs* sequential progression.

tients with nonseminomatous germ cell tumors during the last 15 years[23] potentially denying any marginal clinical relevance of making the diagnosis of atypical seminoma.

Frequent attempts to define histologic criteria for anaplastic seminoma have been made. Mostofi[4] suggested the use of mitotic rate (an average of three mitoses per high power field) as the best criterion for the diagnosis of "anaplastic seminoma." Subsequently, others found that up to 86% of classical seminomas have a high mitotic rate,[3] clearly a percentage at odds with the small number of seminomas which behave aggressively clinically and limiting the ability of mitotic count to define the entity. Aside from mitotic rate, Reuter[5] suggests other features which distinguish AS from classical seminoma. Among them are the loss of cytoplasmic membrane definition, decreased cytoplasm, nuclear pleomorphism and overlap, decrease or loss of lymphocytic infiltrate, and individual cell necrosis. Additional histological characteristics of AS identified in this study include vesicular nuclei and amphiphilic rather than clear or granular cytoplasm.

A few investigators[3,14] have demonstrated differential surface carbohydrate expression in seminoma and embryonal carcinoma (EC), with an absence of expression in seminomas and strong reactivity in nonseminomas. Some believe that this suggests early transformation of seminomas to nonseminomatous histology. The current study did not address carbohydrate antigen expression, but rather employed a panel of antibodies directed against PLAP, AFP, BHCG, and CK. Czaja and Ulbright[24] using a similar panel recently presented data supporting a transition from seminoma to yolk sac tumor. In their study areas of transformation to nonseminoma showed CK and AFP expression.

Niehans and coworkers[15] compared the immunoprofiles of 121 gonadal and extragonadal germ cell tumors. In that study 87% (53/61) of the seminomas and 86% (49/57) of the EC studied were reactive to PLAP. None (0/61) of the seminomas showed reactivity to AFP, while 33% (19/57) of the EC did. Five percent (3/61) and 21% (12/57) of the seminomas and EC, respectively, were immunoreactive for BHCG.

Ten percent (6/61) of the seminomas and 95% (43/57) of the EC were positive for cytokeratin. Although Niehans did not include a category of atypical seminoma, it is interesting to speculate about their results compared to the present series. In the current study no immunoreactivity was found in the atypical seminomas for AFP or BHCG. All of the cases reacted with PLAP antibody and 57% (4/7) were positive for CK. Battifora et al,[16] studied the immunostaining patterns of 18 seminomas (including four "anaplastic" seminomas) and 10 EC with a rabbit antikeratin antiserum and the "AE1" monoclonal antikeratin antibody which reacts with keratin classes 40, 50, and 56.5 kilodaltons (Kd). In this study none of the seminomas and all of the EC showed keratin immunoreactivity. Miettinen et al[17] reported the expression of intermediate filament proteins in 76 testicular germ cell tumors, including 41 seminomas and 15 embryonal carcinomas, using a cytokeratin monoclonal antibody "PKK1" that reacts with keratin classes 40, 45, and 52 Kd. In contrast to the findings of Battifora,[16] nearly half of the seminomas (17/41) in Miettien's study contained either single positive cells or small populations of cytokeratin positive tumor cells. The embryonal carcinoma,s however, showed more diffusely positive cytokeratin immunoreactivity. The cytokeratin cocktail used in the present series covered a wider range of keratin classes than either the Battifora[16] or Miettinen[17] series. Monoclonal antibody CAM 5.2 is reactive with 39, 42, and 50 Kd keratins, while AE1/AE3 is reactive with 30, 40, 50, 56.5, 58, and 65-67 Kd keratins. The MAK-6 is reactive with all the keratin molecular weights previously targeted using CAM 5.2 and AE1/AE3. The "PKKl" antibody used in Miettinen's study[17] was reactive with one molecular weight keratin class not covered by the cocktail in this series, ie, 52Kd keratin. This could have been responsible for the finding of single-cell cytokeratin reactivity in some of their seminomas.

Most recently, Sakr and coworkers[18] compared the keratin expression and clinical outcome in 22 patients with testicular seminoma and found significant cytokeratin immunoreactivity in two patients with pure seminoma who died of disseminated disease. Unfortunately the cytokeratin antibodies which they used were not stated.

Perhaps CK immunoreactivity, along with the various proposed histologic features, DNA index, cytogenetics, and possibly surface carbohydrate expression, all suggest the same basic idea: that AS is a real entity and represents an intermediate step between classical seminoma and EC, lending credence to the opinion of Friedman[7] and Oosterhuis.[10] The trend towards poorer survival in AS[11,12,13] which was seen in our small series also appears to substantiate this view.

We have recently seen an additional case of a mixed testicular germ cell tumor where AS, as we have defined it, seemed to form a transitional histologic bridge between classical seminoma and EC. In this case the AS was essentially an EC in a solid growth pattern without epithelial structures. Ultimately the practical importance of recognizing AS as a histologic entity may be that if it is found in association with classical seminoma particular care should be taken to rule out a mixed component of EC or yolk sac tumor using appropriate immunocytochemical panels or flow cytometry. Interestingly, in the recent case described above, DNA ploidy showed a DNA index of 1.54 in the seminoma and 1.1 in the AS and EC. DNA ploidy analysis of AS will be the subject of a subsequent report.

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Acute Acalculous Cholecystitis Associated with Common Hepatic Duct Obstruction: A Variant of Mirizzi's Syndrome

RAYMOND J. IPPOLITO, M.D.

ABSTRACT—A variation of Mirizzi's syndrome is described in which common hepatic duct obstruction occurs due to extrinsic compression by an acutely inflammed acalculous gallbladder abutting the common hepatic duct.

This case suggests that extrinsic compression and inflammation in the absence of stones can result in complete obstruction of extrahepatic biliary flow.

Introduction

COMMON hepatic duct obstruction secondary to a stone impacted in the neck of the gallbladder was first reported by Kehr in 1905[1] and Ruge in 1908.[2] In 1948 Mirizzi outlined a syndrome describing the common components characterizing this condition which consist of:

1) An anatomic variation of the cystic duct or neck of the gallbladder such that it lies parallel to the common hepatic duct.

2) Impaction of a stone in the cystic duct or neck of the gallbladder.

3) Partial mechanical obstruction of the common hepatic duct by a stone or the resulting inflammatory reaction and edema.

4) Jaundice, recurring cholangitis, and, if long standing, biliary cirrhosis.[3]

In the present case inflammation secondary to acute necrotizing cholecystitis in the absence of calculi was responsible for obstruction of the common hepatic duct. All of the facets of Mirizzi's syndrome except cholelithiasis were present. This variation of Mirizzi's syndrome has not been previously described. It is therefore important to consider acalculous cholecystitis as a possible etiology of common hepatic duct obstruction.

Case Report

C.C. was a 78-year-old white male in good health until the day of admission when he developed the acute onset of abdominal pain localized to the epigastrium associated with nausea and vomiting. He denied jaundice, shaking chills, or fever. There was no history of weight loss, change in appetite, anorexia, or diarrhea. His past medical and surgical history was unremarkable.

On physical examination he presented as a mildly dehydrated elderly male in moderate distress. His temperature was 37°C and his sclera were icteric. His abdomen was tender in the epigastrium and right upper quadrant without palpable masses or rebound tenderness. There was voluntary guarding in the right upper quadrant of his abdomen. His bowel sounds were active and there was no evidence of peritoneal irritation. Abdominal films were unremarkable; however an electrocardiogram showed significant ST-T wave depression in several leads consistant with ischemia. His initial laboratory data revealed a white cell count of 13,600 cells/cu mm with 85% segmented and 5% band forms. His total bilirubin was 3.03 mg/dL(N=0.2-1.0 mg/dL) with a direct bilirubin of 1.08mg/dL(N=0.0-0.2mg/dL). His SGOT was 64 IU, alkaline phosphatase 153 IU, SGPT 341 IU, while his amylase and lipase were normal.

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A nitroglycerine intravenous drip for his myocardial ischemia was begun. Serial EKGs and continuous cardiac monitoring along with serial enzymes were drawn. Broad spectrum antibiotics and analgesic medications were administered.

An ultrasound study (Fig.1) demonstrated a physiologically distended gallbladder with no visible stones and a common bile duct measuring 5mm in diameter (Fig.2). A Dishida scan (Fig.3) revealed a normal angiographic phase but no excretion of dye from the liver at five minutes, 45 minutes, two hours, or six hours. Repeat laboratory values five hours after the initial values revealed an identical white blood cell count but the total bilirubin had risen from 3.03mg/dL to 5.90mg/dL. His SGOT rose from 64 IU to 387 IU, alkaline phosphatase from 153 IU to 275 IU, and his SGPT from 34 IU to 184 IU. Reexamination of the patient's abdomen revealed a palpable mass in the right upper quadrant. At this point the working diagnosis was acute cholecystitis with common bile duct obstruction and possible cholangitis. Since an acute myocardial infarction could not be ruled out at this time, surgical intervention requiring general anesthesia was considered risky. An endoscopic retrograde cholangio pancreatography (ERCP) and papillotomy were therefore done to relieve the bile duct obstruction and confirm the diagnosis. Retrograde filling of the common hepatic duct (Fig. 4) revealed the typical radiological features of Mirizzi's syndrome as described by Clemett.[10] A broad curved impression on the lateral aspect of the common hepatic duct was apparent. Retrograde filling of the cystic duct and gallbladder was also seen. The gallbladder and intrahepatic biliary tree were opacified and appeared normal in caliber. A papillotomy was done hoping to decompress the biliary tree and the patient was observed for an additional 12 hours. Post ERCP, the patient's temperature rose to 40°C and his abdomen remained tender to palpation with a mass in his right upper quadrant. His white blood cell count had increased to 21,800/cu mm, his bilirubin to 8.29mg/dL total, with 4.12mg/dL direct. His SGOT had decreased to 130 IU; his alkaline phosphatase and SGPT were unchanged.

A delayed Dishida scan at 24 hours (Fig. 5) showed no excretion of dye outside the liver. At this time, approximately 24 hours after the patient's arrival at the hospital, the cardiac status improved. There was apparently complete resolution of his myocardial ischemia with normal cardiac enzymes and normal ST-T wave segments.

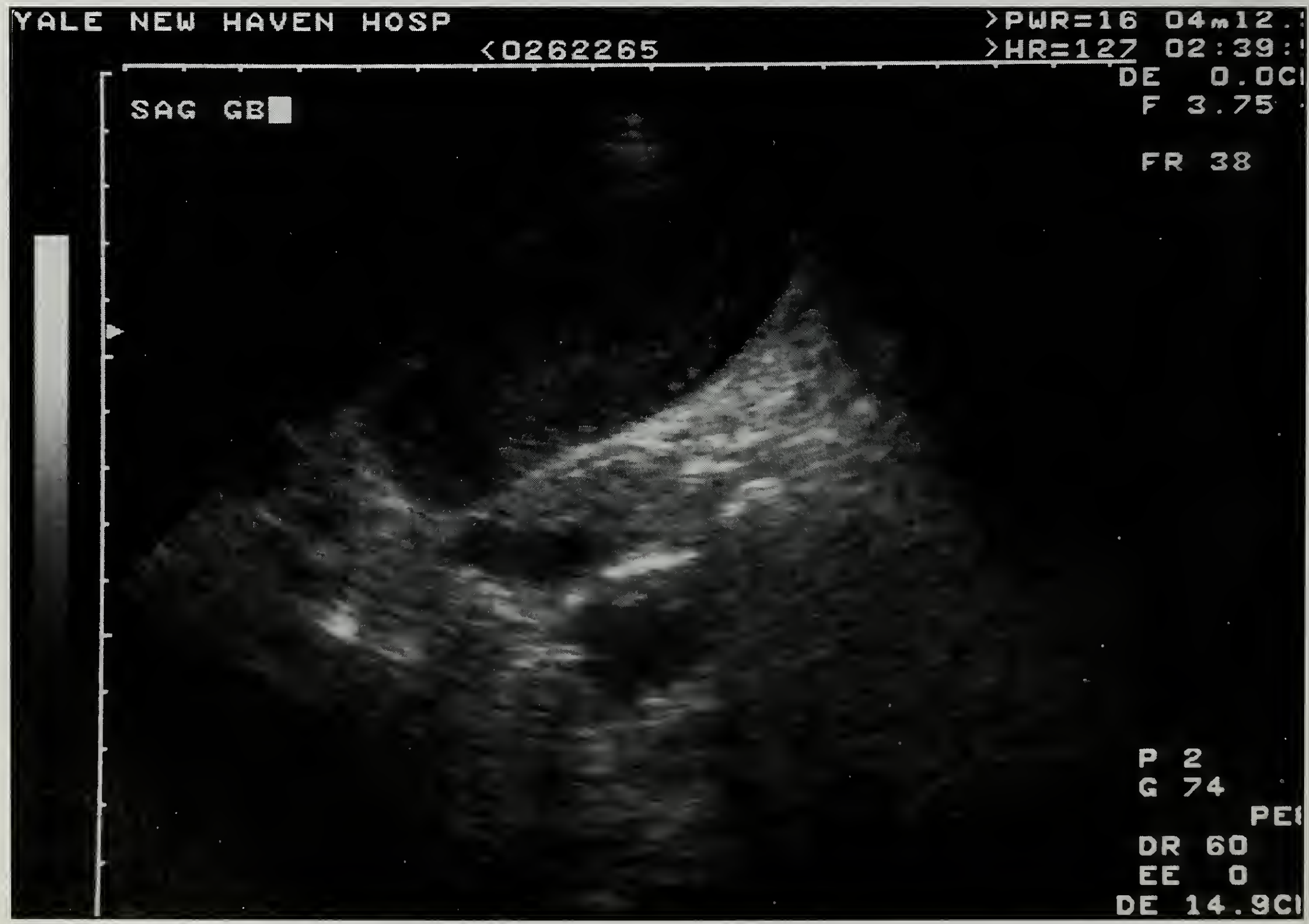

Figure 1.—Ultrasound of gallbladder demonstrating a physiologically distended gallbladder without evidence of gallstones.

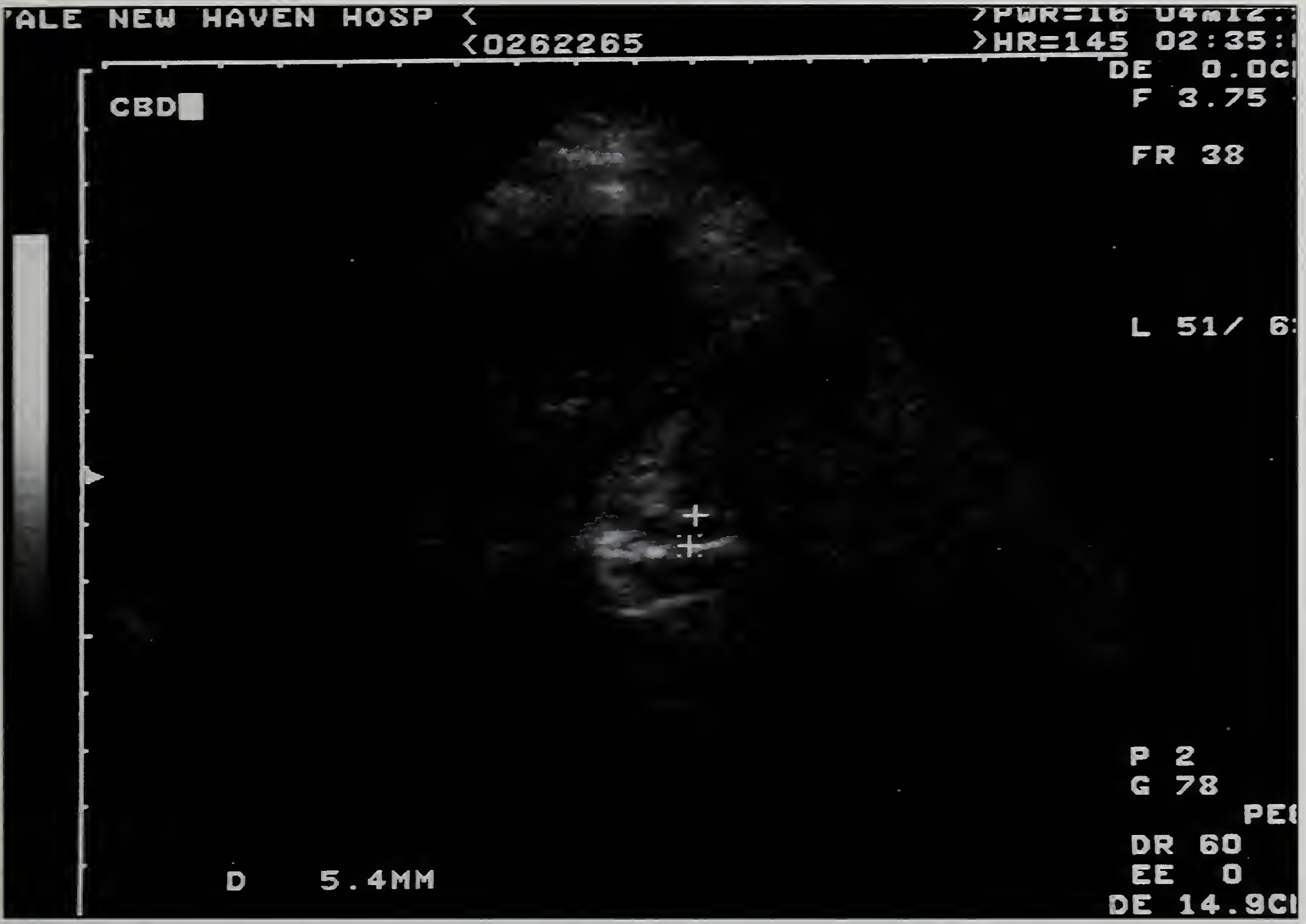

Figure 2.—Ultrasound demonstrating a common bile duct of normal size.

The patient was taken to surgery and found to have an acutely inflamed, gangrenous gallbladder which was necrotic but contained no stones. There was considerable periportal inflammation with the neck of the gallbladder swollen and lying immediately anterior to and partially compressing the common hepatic duct at the common duct-cystic duct junction. The gallbladder was removed and an operative cholangiogram performed which was normal. A liver biopsy revealed early periportal cholangitis. There were no stones in the gallbladder or elsewhere in the biliary tree. Pathological study of the gallbladder revealed an acute necrotizing acalculous cholecystitis.

The patient's postoperative course was unremarkable. His liver enzymes gradually returned to normal. His follow-up office visits, now three months after surgery, have shown a progressive return to normal activities with no residual clinical or laboratory abnormalities.

Discussion

This case represents a previously unreported variation of Mirizzi's syndrome in that all of the features of the syndrome were present except for the presence of gallstones in the neck of the gallbladder as the cause of the common hepatic duct obstruction. In a review of the previously reported cases of Mirizzi's syndrome,[4-10] all had stones impacted in the neck of the gallbladder causing extrinsic compression of the bile duct. Although the reported case is clearly unusual, some degree of obstructive jaundice is commonly associated with acute cholecystitis.[11] Obstruction to biliary flow associated with acute cholecystitis is difficult to explain since stones are often absent in the extrahepatic biliary tree in these cases. This has led to some controversy over the mechanism of bile obstruction and therefore excretion.

Although active peristalsis is not seen in the extrahepatic biliary tree, Mirizzi postulated the presence of a "hepatic duct mechanism" involving dilatory and contractile phases, which serve a propulsive function in the excretion of bile.[3] Mirizzi claims that small bundles of circular and corkscrew muscles can be demonstrated histologically throughout the entire extrahepatic biliary tree which are responsible for this propulsive function. Furthermore, extrinsic compression and spasm caused by mechanical pressure of an impacted stone as well as the ensuing inflammatory reaction can interfere with the contractile function of the extrahepatic biliary tree leading to obstructive jaundice.

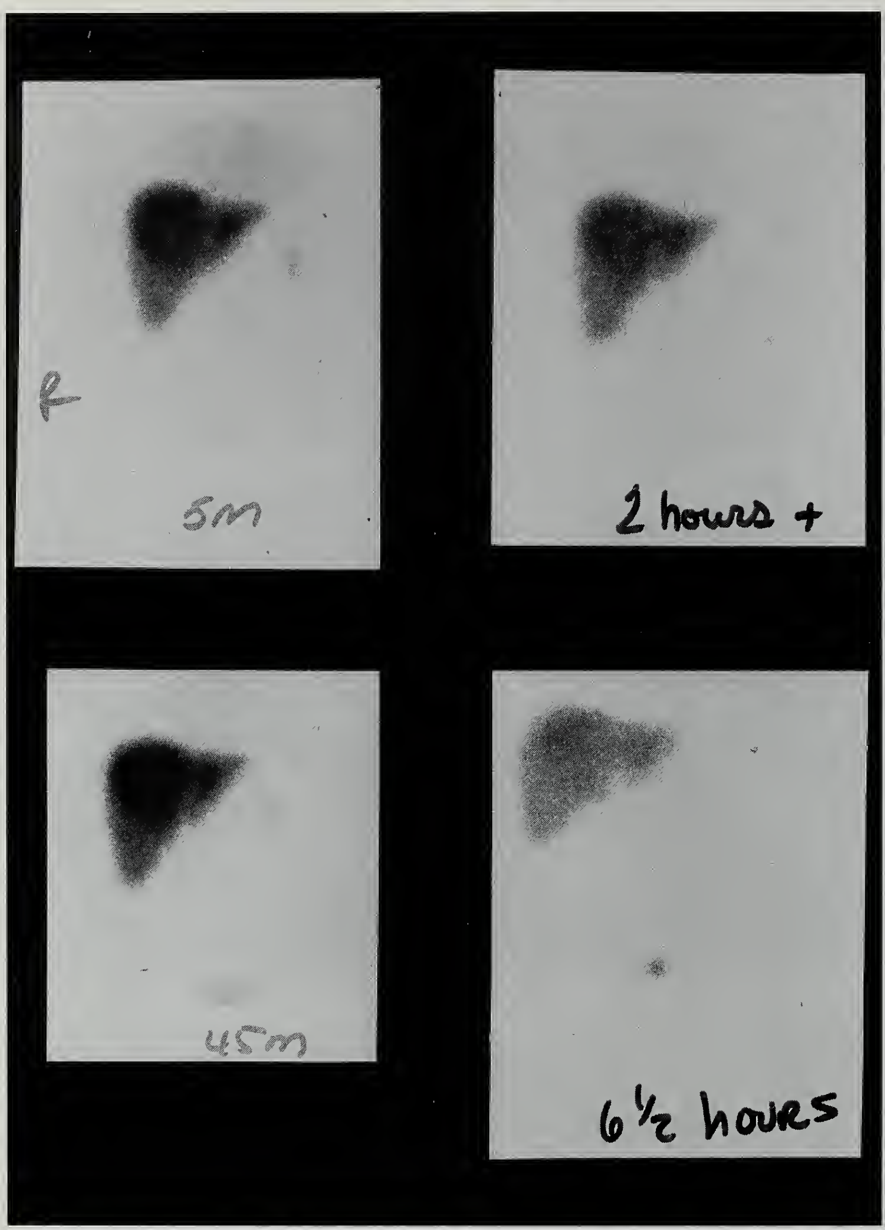

Figure 3.—Dishida scan revealing a normal angiographic phase but no extrahepatic excretion of dye at five minutes, 45 minutes, two hours, or six and one-half hours.

Spiro on the other hand, disputed Mirizzi's contention, suggesting that small calculi which may be very difficult to demonstrate find their way into the common bile duct and briefly impact at the sphincter of Oddi leading to a transient biliary obstruction.[11]

In this case, biliary obstruction progressed in the absence of demonstrable stones. An ERCP with sphincterotomy was performed and failed to abate the progression of the obstructive jaundice, ruling out sphincter spasm or calculi as a source of obstruction. At surgery, an acutely inflammed, distended, and gangrenous gallbladder containing no stones was found surrounded by a periportal inflammatory reaction. It was, most likely, the combination of extrinsic compression by the distended gallbladder coupled with the periportal inflammatory reaction which interferred with the normal contractile function of the extrahepatic biliary tree leading to the obstruction of the bile flow.

This hypothesis, first proposed by Mirizzi in 1948,[3] is further supported by the patient's postoperative clinical course which was a more gradual resolution of his obstructive jaundice coincident with the resolution of periportal edema rather than the more rapid clearing of jaundice often seen when an obstructing calculus is removed.

Although this case report supports Mirizzi's hypothesis of an "hepatic duct mechanism," definitive evidence is lacking. In light of the present technology available to investigate the biliary tree, this important hypothesis concerning the mechanism of biliary excretion deserves further investigation.

Summary

A variation of Mirizzi's syndrome is presented in which complete extrahepatic biliary obstruction is caused by an acutely inflamed gallbladder without the presence of gallstones. Although the patient's clinical and laboratory findings were consistent with biliary obstruction with cholangitis, ERCP failed to show an intrinsic obstruction but rather demonstrated the typical radiological features of Mirizzi's syndrome. At laparotomy an acutely inflamed, acalculous, gangrenous gallbladder was found to be extrinsically compressing the extrahepatic biliary tree causing the obstruction. An intraoperative cholangiogram after cholecystectomy showed a normal biliary tree and the patient made an uneventful recovery following surgery.

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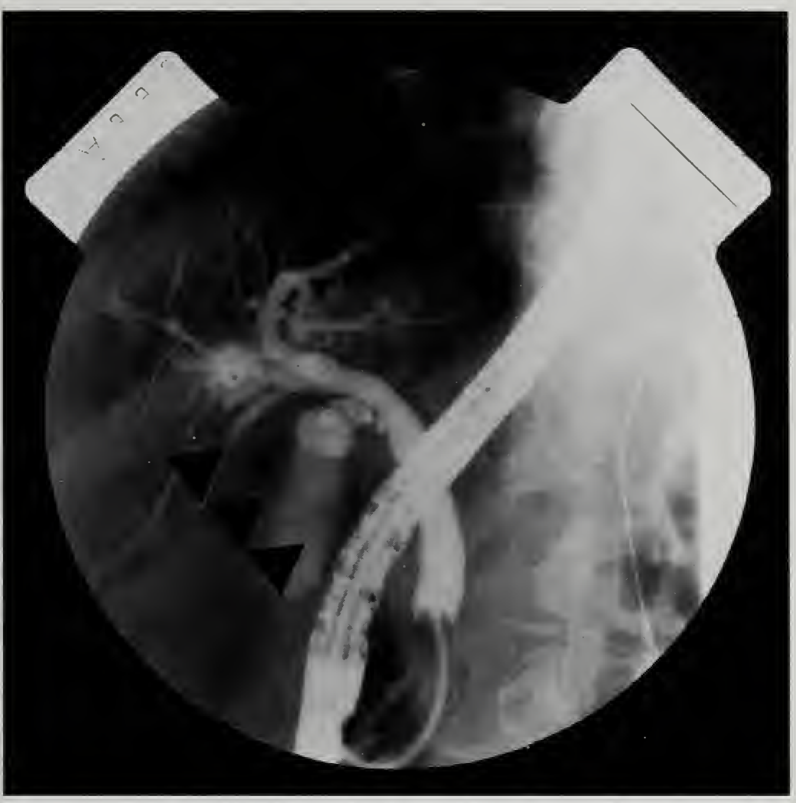

Figure 4.—Retrograde filling of the common hepatic duct revealing the typical features of Mirizzi's syndrome. Arrows demarcate the broad curved impression of the inflammed gallbladder on the lateral aspect of the common hepatic duct.

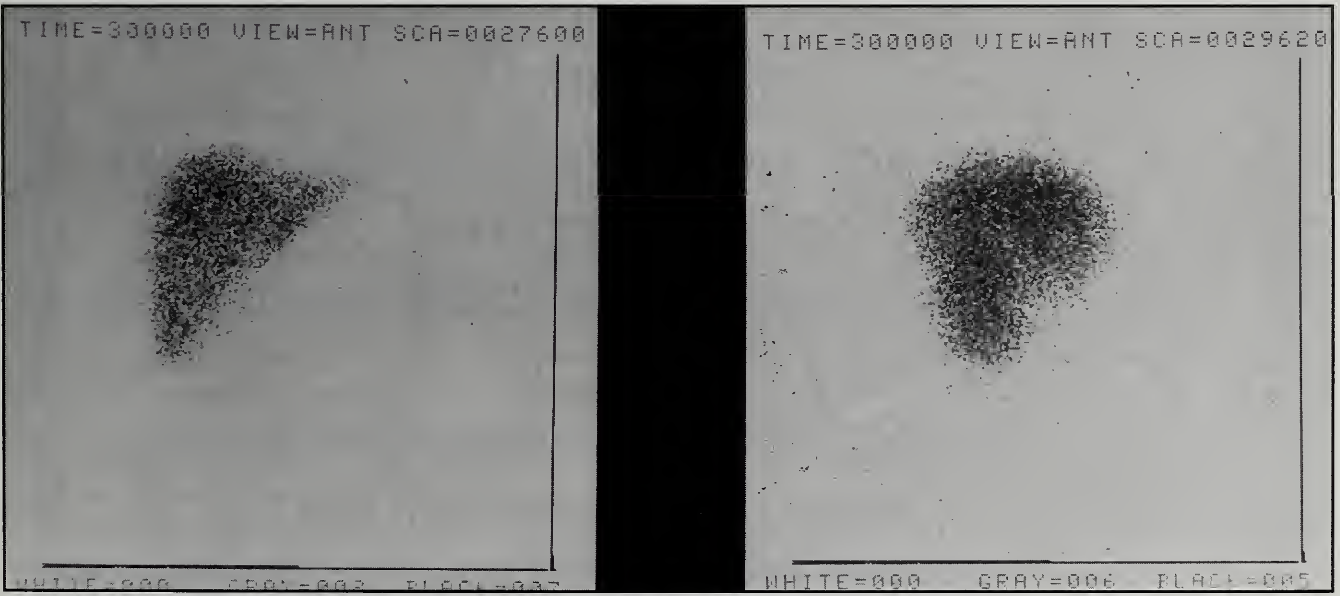
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Figure 5.—Dishida scan revealing no excretion of dye outside the liver at 24 hours.

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Physician Reporting of Lyme Disease—Connecticut, 1991-1992

CENTERS FOR DISEASE CONTROL, ATLANTA

ALTHOUGH disease reporting by physicians is an essential component of public health surveillance, the extent of physician participation in reporting specific diseases is not routinely assessed. As part of an evaluation of Lyme disease (LD) surveillance, the Connecticut Department of Health Services (CDHS) conducted a study to determine the number and specialty of Connecticut physicians who reported LD cases in 1991 and/or 1992. This report summarizes the results of this study.

To characterize physician reporting of LD, the CDHS expanded the LD surveillance database to include the names, towns, and license numbers of 4,570 licensed physicians from four primary-care specialties: internal medicine (2,520), general/family practice (1,096), pediatrics (839), and dermatology (115). This primary-care physician group was a subset of the 9,185 physicians (excluding physicians in residency programs) licensed by the CDHS as of 30 January 1992. If LD was reported by a physician not on the primary-care physician list, the name was checked against the complete list of licensed physicians.

From 1 January 1991, through 31 December 1992, 2,952 cases meeting the CSTE/CDC surveillance case definition for LD[1] were reported to the CDHS. Of these, 2,432 (82%) were reported by physicians from the four primary-care specialties and 59 (2%) from physicians in other specialties (Table 1). A total of 359 (12%) cases was reported by either a group practice; a hospital, laboratory, or clinic; or another state health department. Sixty-seven (3%) were reported with no physician or practice name listed, and 35 (1%) were reported by physicians whose license numbers could not be determined.

Of the 4,570 physicians from the four specialties, 341 (7%) reported LD in 1991 and 313 (7%) reported cases in 1992 (Table 2). Twenty-five physicians reported 43% to 62% of the cases in five counties.

Reported by: PA Mshar, SH Ertel, ML Cartter, M.D., JL Hadler, M.D., State Epidemiologist, Connecticut State Department of Health Services. Bacterial Zoonoses Branch, Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: LD was first recognized in 1975 in Connecticut; the disease is endemic in each of Connecticut's eight counties, and the state rate of 54 cases per 100,000 population was the highest reported in the United States in 1992.[2] In November 1991, in collaboration with CDC, the CDHS began active surveillance for LD in two areas of the state and continued passive, physician-based surveillance in other areas. In 1992, 632 (36%) cases were reported by the 127 physicians in the active surveillance study.

The finding that only 7% of physicians in selected primary-care specialties in Connecticut reported LD in 1991 and/or 1992 suggests that most primary-care physicians in the state have not diagnosed cases of LD and/or that under-reporting of cases by physicians is common. Of the 2,952 LD cases reported, 2,432 (82%) were reported by primary-care physicians: general practice/family medicine (46%), internal medicine (32%), and pediatric (21%) specialties. A limited number of cases was reported by dermatologists (1%), even though the earliest and most characteristic sign of LD is a large, expanding, annular dermatitis (erythema migrans), usually arising 3-30 days following tick bite.[3]

As the findings in Connecticut indicate, a physician-based passive system of LD surveillance may be sensitive to small changes in reporting practices. Many of the cases in Connecticut were reported by a small group of physicians.

The findings in this report did not directly assess under-reporting. Additional studies are needed to determine the percentage of LD cases that are diagnosed by physicians but not reported to local and state health departments.

—*Morbidity and Mortality Weekly Report,* Vol. 42, No. 18, 1993.

Physician participation is critical in public health surveillance efforts. Surveillance should be improved by educating physicians, especially those in primary-care specialties, about the importance of reporting cases of notifiable diseases, including LD, and other selected health events.

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Table 1.—Lyme disease case reporting sources—Connecticut, 1991-1992

	1991		1992		Total	
Source	**No.**	(%)	**No.**	(%)	**No.**	(%)
General/Family practice	490	(41)	629	(36)	1119	(38)
Internal medicine	340	(29)	436	(25)	776	(26)
Pediatrics	196	(16)	317	(18)	513	(17)
Dermatology	4	(0)	20	(1)	24	(1)
Other specialty	27	(2)	32	(2)	59	(2)
Mixed specialty group	0	—	152	(9)	152	(5)
Hospital/Laboratory/Clinic	38	(3)	72	(4)	110	(4)
No physician/practice name	30	(3)	37	(2)	67	(3)
State health department	52	(4)	45	(3)	97	(3)
Unknown license number	15	(1)	20	(1)	35	(1)
Total	**1,192**	**(100)**	**1,760**	**(100)**	**2,952**	**(100)**

Table 2.—Number and percentage of physicians reporting at least one case of Lyme disease, by specialty—Connecticut, 1991-1992

		Physicians reporting			
		1991		1992	
Specialty	**No. physicians**	**No.**	(%)	**No.**	(%)
General/Family practice	1,096	108	(10)	93	(8)
Internal medicine	2,520	156	(6)	126	(5)
Pediatrics	839	73	(9)	81	(10)
Dermatology	115	4	(3)	13	(11)
Total	**4,570**	**341**	**(7)**	**313**	**(7)**

Lyme Disease—United States, 1991-1992

CENTERS FOR DISEASE CONTROL, ATLANTA

SURVEILLANCE for Lyme disease (LD) was initiated by CDC in 1982,[1] and in 1990, the Council of State and Territorial Epidemiologists (CSTE) approved a resolution making LD nationally reportable. During 1982-1991, states reported 40,195 cases of LD. In 1992, LD accounted for more than 90% of all reported vectorborne illnesses in the United States (CDC, unpublished, 1993). This report summarizes surveillance for LD in the United States during 1991-1992.

Forty-nine states and the District of Columbia require reporting of LD. The CSTE/CDC surveillance case definition requires the presence of an erythema migrans rash or at least one objective sign of musculoskeletal, neurologic, or cardiovascular disease and laboratory confirmation of infection.[2]

During 1991, 47 states reported 9,465 cases of LD to CDC;[3] during 1992, 45 states reported a provisional total of 9,677 cases, representing a 19-fold increase over the 497 cases reported by 11 states in 1982[1] (Fig. 1). Most cases were reported from the northeastern, mid-Atlantic, north central, and Pacific coastal regions (Fig. 2). Established enzootic cycles of *Borrelia burgdorferi,* the causative agent of LD, have been identified in 19 states; these states accounted for 94% of cases reported during 1991-1992.

The overall incidence rate of reported LD during 1992 was 3.9 per 100,000 population. During 1992, Connecticut (53.6 cases per 100,000), Wisconsin (10.7), and California (0.8) reported the highest rates in the northeast, north central, and Pacific coastal regions, respectively. Rates in some counties in California, Connecticut, Massachusetts, New York, and Wisconsin exceeded 200 cases per 100,000; the incidence was highest in Nantucket County, Massachusetts (449.1). The number of reported cases in Connecticut and Rhode Island increased 48% and 93%, respectively, over 1991. New York reported a provisional total of 3,370 confirmed cases during 1992, a decrease of 574 cases from 1991. From 1991 through 1992, decreases were greatest in Westchester (1,762, compared with 1,154) and Suffolk (860, compared with 654) counties. In 1992, these two counties accounted for 19% of the national total, compared with 28% in 1991.

Among 7,507 cases analyzed for which patient age was given, the largest numbers were reported for persons aged 0-9 years (1,087 [14.5%]), 30-39 years (1,272 [16.9%]), and 40-49 years (1,271[16.9%]). Of 7,642 cases, 3,770 (49.3%) occurred among males.

Reported by: State health depts. Bacterial Zoonoses Branch, Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The distribution of LD in the United States is highly correlated with the distribution of the principal tick vectors *Ixodes dammini* (reported to be the same species as *I. scapularis,* the black-legged tick[4]) in the northeastern and north central regions and *I. pacificus* (ie, the western black-legged tick) in the Pacific coastal states.[5] The occurrence of sporadic cases in states without established enzootic transmission of *B. burgdorferi* may be due to infectious exposures in limited, unrecognized foci, exposures during visits to areas with endemic LD outside the state of residence, misclassification, or misdiagnosis. Enzootic foci are highly localized and are dependent on environmental factors favorable to vector ticks and their maintenance hosts (especially deer) and to rodent reservoirs of *B. burgdorferi.* Therefore, subtle ecologic differences may account for substantial differences in incidence between states, counties within states, and adjacent townships.[6,7]

The 19-fold increase in reported LD cases since 1982 may reflect a combination of at least four factors: heightened awareness of LD by patients and physicians; increased use of laboratory testing in LD diagnosis; increased surveillance and health department requirements for reporting; and a true increase in the number of cases. Surveillance practices in particular have had an important impact on the reported occurrence of LD. For example, active physician-based surveillance conducted in 1992 by state health departments in collaboration with CDC in

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—*Morbidity and Mortality Weekly Report*, Vol. 42, No. 18, 1993.

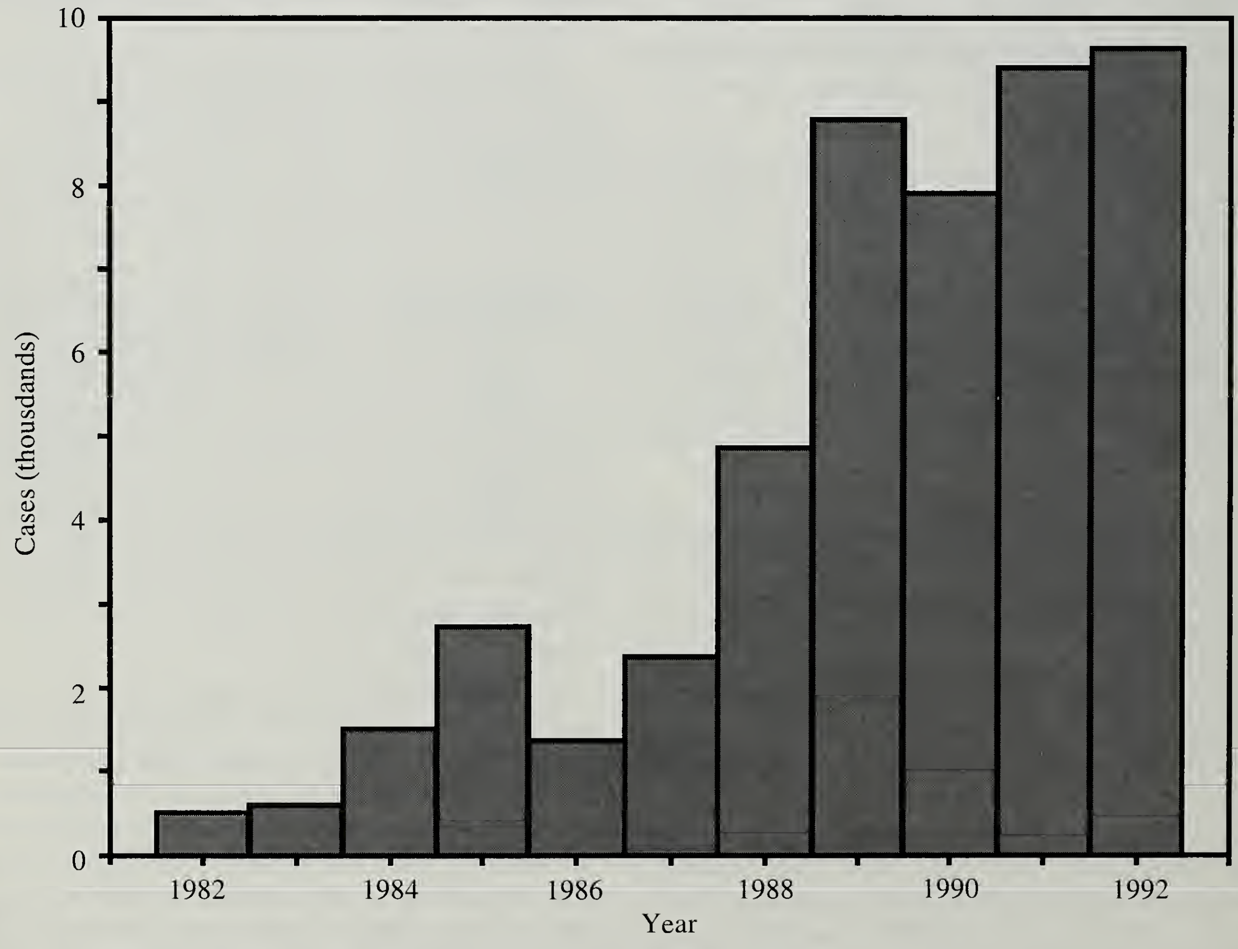
Connecticut and Rhode Island resulted in substantial increases in reported cases over 1991. By contrast, the decrease in reported cases in Suffolk and Westchester counties, New York, probably reflects reductions in state and county surveillance personnel necessary to maintain previous levels of case detection and validation.

LD is considered an emerging infectious disease because of the impact of changing environmental and socioeconomic factors, such as the transformation of farmland into suburban woodlots that are favorable for deer and deer ticks.[8,9] Demographic profiles of persons with LD reflect mostly suburban and rural risk. Evidence suggests both continuing geographic spread and increasing incidence over time in established endemic foci.[6,7]

The diagnosis of LD is based principally on clinical findings, and results of serologic testing are supportive. Serologic tests for LD are not standardized, and problems in the reliability and accuracy of serologic test results have limited their usefulness for surveillance purposes. CDC, in collaboration with the Association of State and Territorial Public Health Laboratory Directors, held a workshop on standardized serologic testing for LD in March 1993, and an evaluation of a standardized testing protocol by selected public health laboratories will be conducted during May-August 1993.

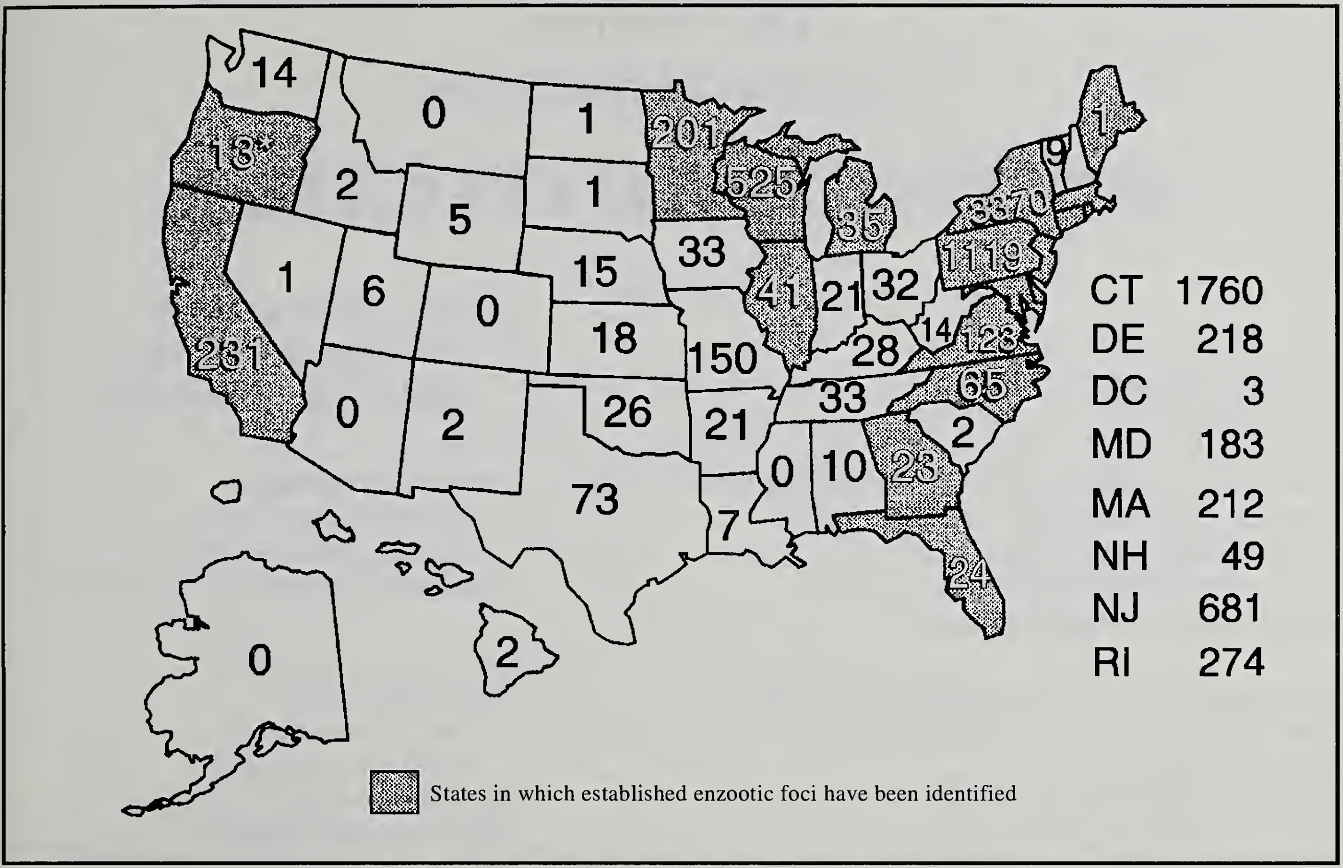
Although the numbers of LD cases reported by some states have fluctuated by year, the annual number of reported cases in the United States has remained relatively constant during 1989-1992, possibly reflecting the implementation of the uniform case definition and standardized reporting. However, the true incidence of LD in the United States is unknown, and estimates are subject to the influences of underreporting, misclassification, and overdiagnosis. The development of standardized, sensitive and specific serologic tests and better surveillance should result in improved estimates of LD.

Figure 1.—Reported cases of Lyme disease, by year—United States, 1982*–1992†



*In 1982, 11 states reported cases, compared with 47 and 45 in 1991 and 1992, respectively.
†1992 data are provisional.

Figure 2.—Reported cases of lyme disease—United States, 1992.


CT 1760
DE 218
DC 3
MD 183
MA 212
NH 49
NJ 681
RI 274
States in which established enzootic foci have been identified

*Mandatory reporting not required.

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Important Advances in Clinical Medicine

Pediatrics

The Council on Scientific Affairs of the California Medical Association presents the following inventory of items of progress in pediatrics. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of these items of progress in pediatrics that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Pediatrics of the California Medical Association, and the summaries were prepared under its direction.

Recent Advances in Pediatric Liver Transplantation

THE first successful liver transplantation was done on a child in 1967. Before 1980, liver transplants in children were rare because of the low, 20%, five-year survival rate. In addition, the high-dose corticosteroid immunosuppression caused severe debilitating side effects, including life-threatening infections, growth retardation, cataracts, and osteopenia. With the introduction of cyclosporine to the immunosuppressive regimens, the five-year survival rate has improved to 60% to 70%, and the dosage of corticosteroids has been lowered so that side effects are substantially reduced. In addition, a new preservation solution (University of Wisconsin solution) and rapid en bloc harvesting techniques have helped reduce the 20% incidence of immediate liver graft failures to less than 2%. With these improvements, liver transplantation has become accepted for the treatment of end-stage liver disease. Morbidity and mortality in infants, however, remained high. Of infants with end-stage liver disease, 25% to 50% died before transplantation because appropriate donors could not be found for infants weighing less than 10 kg. Infants who received transplants had only a 40% one-year survival rate.

Over the past five years, dramatic changes in the surgical management of infants have increased the survival rate. Perhaps the most important is the ability to use a portion or a lobe from an adult liver (reduced-size liver transplant). Thus, an adult liver, often weighing 10 times more than the infant's liver, can be used. In addition, reduced-size liver transplants allow an adult donor's large hepatic artery to be used, thereby reducing the risk of hepatic artery thrombosis and graft failure from 20% to 5%.

The use of living-related donors has further helped in obtaining reduced-sized livers for small children when cadaver donors are not available. The success of using a living-related transplant is comparable to a cadaver transplant but provides the advantage that transplantation can be done electively before severe, irreversible complications of the liver disease have developed.

Newer immunosuppressive agents increase the hope for fewer side effects in the future. One such agent, FK 506, is an effective immunosuppressive drug without the known side effects of cyclosporine, such as hirsutism, gingival hyperplasia, coarsening of facial features, and hypertension. Also, FK 506 is better absorbed than cyclosporine postoperatively and during times of gastrointestinal infection. It has side effects that include insomnia and renal toxicity, however.

With improved medical and surgical management, 95% of infants and children with liver failure will now survive long enough to receive a transplant. More than 80% of children with transplants are expected to survive more than five years with minimal morbidity. The current

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average cost of $140,000 per liver transplant—ranging from $60,000 to $500,000—will decrease. The recent use of xenografts (nonhuman donors, such as pigs and baboons) remains controversial. The potential benefits of using xenografts include an increased availability of donors and reduced costs for organ procurement.

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Pain Management in Pediatrics

UNTIL recently, anesthesia and analgesia were not administered to newborns and infants during surgical and invasive procedures because of the concern that the risk of cardiovascular complications outweighed the benefits of pain relief and a smoother operative course. Current physiologic and behavioral research shows that general and local anesthesia are beneficial and carry minimal risks when combined with appropriate monitoring and close clinical observation. Recent studies have shown reduced morbidity and mortality in newborns undergoing major operations who received a general anesthetic and judicious use of opioids postoperatively, presumably by blunting catabolic stress responses. Improved pain control in children can be achieved with patient-controlled analgesia pumps, continuous opioid infusions, continuous epidural infusions, and topical analgesic agents. Patient-controlled analgesia pumps now permit children as young as seven years and, in selected cases, as young as five years, to adjust their pain medications to their individual needs through this computer-programmed device.

A continuous infusion of opioids, primarily morphine provides excellent pain relief to younger children and those otherwise unable to use a patient-controlled analgesia pump. These infusions maintain a steady level of pain relief and eliminate oversedation immediately after an intravenous dose and inadequate pain relief before the next injection.

Epidural analgesia has proved to be a safe adjunctive measure to decrease general anesthetic requirements and provide postoperative pain relief for children undergoing a wide range of major surgical procedures. Catheters can be placed in the epidural space by the caudal (sacral), lumbar, or thoracic routes after the initiation of general anesthesia, to provide excellent postoperative pain relief with less of the sedating and respiratory depressant effects of systemic narcotics. Long-acting local anesthetics such as bupivacaine hydrochloride with or without concomitant opioids can be used in concentrations low enough to minimize motor dysfunction and yet provide effective pain relief.

Topical anesthetics such as EMLA (a eutectic mixture of prilocaine hydrochloride and lidocaine) are effective through intact skin and can greatly diminish the pain associated with painful procedures commonly done on children, such as venipunctures, intravenous cannulation, and spinal taps. Although used extensively in Europe, EMLA has just recently received approval by the Food and Drug Administration and is now available in the United States.

Chronic or recurrent pain in children (such as headaches and abdominal pain) is often managed by a multidisciplinary approach combining physical therapy, transcutaneous electrical nerve stimulation, relaxation, biofeedback, life-style alterations, stress management, supportive counseling, and the judicious use of medications. Neuropathic pain syndromes, including phantom limb pain and reflex sympathetic dystrophy, can be disabling and are often refractory to standard orthopedic treatments. Reflex sympathetic dystrophy, most common in female adolescent athletes, involves a pattern of intense pain to touch and sympathetically mediated hypoperfusion in an area of earlier injury. Physical and psychological therapy may be helpful along with low doses of tricyclic antidepressants that have shown particular efficacy in treating certain types of neuropathic pain in adults. When these measures prove ineffective, sympathetic nerve blocks can be done to provide pain relief, often with long-lasting results.

With the many new, safe, and effective methods to provide pain relief to children, it has become easier in the past few years to make children more comfortable during and after necessary medical procedures. Neuropathic pain syndromes continue to provide an important challenge to health care professionals and will most likely be a major topic of pain research for years to come.

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Advances in the Management of Childhood Asthma

INFLAMMATION is now thought to play a central role in the pathophysiology of asthma. This diffuse eosinophilic inflammatory process leads to a state of increased airway reactivity or hyperresponsiveness in people with asthma. This means that the airways will respond with constriction to lesser amounts of stimuli, such as exercise or antigens, and that an asthma attack can occur more rapidly.

Because of the role of inflammation in asthma, recommendations for the treatment of chronic asthma have changed. Patients who have more than occasional symptoms of asthma should be treated continuously with anti-inflammatory agents by inhalation. Two classes of drugs that are anti-inflammatory are cromolyn and steroids. When these are taken over time, airway responsiveness improves.

Because of its safety, cromolyn sodium is recommended as the first medication to be used in children with asthma. It should be given three to four times a day; when the asthma is under control, the frequency can often be reduced. Some patients require an increase in the dosage when the pollen season begins. Cromolyn can also be used on an intermittent basis before exercise or before antigen exposure. It is important to know that cromolyn is available in a nebulizer solution, 20 mg per vial, in 20-mg capsules, and in a metered-dose inhaler, 1 mg per puff. Thus, if a patient is not responding to two puffs of the metered-dose inhaler four times a day, the number of puffs could be increased or the patient switched to the nebulizer solution.

Inhaled corticosteroids are effective anti-inflammatory drugs and should be added if the patient's asthma is not controlled with a regimen of cromolyn alone. In some patients it may be necessary only to add inhaled steroids on a seasonal basis when symptoms increase. Inhaled corticosteroids are thought to be safe when the dose is 400 μg or less a day. As the dose is increased, systemic effects, such as diminished growth rate, may occur. Different steroid preparations have different concentrations: beclomethasone dipropionate 50 μg per puff; triamcinolone acetonide, 100 μg per puff; and flunisolide, 250 μg per puff. Inhaled corticosteroids should always be used with a spacer device in young children to prevent deposition of the drug in the mouth and vocal cords and to decrease local side effects, such as thrush.

Because the intermittent use of β-agonist bronchodilators results in a greater improvement in asthma than the continuous use, β-agonists should be used only on an "as-needed" basis for the treatment of acute asthma attacks and before physical activity in patients with exercise-induced asthma. Side effects include muscle tremor, a mild increase in heart rate, and a possible lowering of potassium levels. Theophylline remains an excellent bronchodilator but does not appear to have anti-inflammatory effects. It may be needed in patients who require continuous bronchodilation or who have nocturnal asthma. Serum concentrations of theophylline should be monitored and maintained at between five and 15 μg per mL. Side effects from theophylline are dose dependent and include headache, nausea, nervousness, tachycardia, and, at toxic serum concentrations, seizures.

Inhaled medications can be administered to children in several ways. In children younger than five years, a compressor with nebulizer and mask is effective. Children five years and older often have some difficulty coordinating a metered-dose inhaler, so a spacer device—AeroChamber (Forest Pharmaceuticals, Inc.) or InspirEase (Schering Corporation)—is helpful.

Peak-flow monitoring is essential for following the course of moderate to severe chronic childhood asthma. This simple maneuver can be used by physicians in their offices or in an emergency department to test the degree of airway constriction. Patients can record peak flows at home with inexpensive portable peak-flow meters and adjust medications before an asthma attack occurs. Peak-flow monitoring is most useful when related to a zone system based on the colors of traffic lights. Green zone—80% to 100% of personal best—means the asthma is stable and no change in medication is needed. Yellow zone—50% to 80% of personal best—signals caution and that an increase in medication, cromolyn or steroids, is needed. Red zone—less than 50% of personal best—signals danger and that immediate action is needed. A written action plan is helpful in instructing the patient and family on how to increase the medications.

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What's New in Chickenpox (Varicella-Zoster) Infection?

THREE developments promise to improve the clinical management of patients with varicella-zoster virus: vaccine release, oral acyclovir use in healthy children with chickenpox, and a new latex agglutination test.

Vaccine

Live attenuated varicella vaccine is expected to be licensed by the United States Food and Drug Administration in the spring of 1993 for use in all children and adults who have never had chickenpox. The vaccine was developed in Japan in the 1970s, and its use has been highly controversial in the United States. The arguments against the vaccine are that varicella is not severe enough a disease to warrant prevention by vaccine, that immunization with a vaccine that can cause latent infection (zoster) might increase the incidence of zoster, and that immunity after vaccination may not persist for a substantial period of time. Although the responses to these arguments remain incomplete, there are increasing data that varicella is not necessarily benign, that zoster is less common after vaccination than after the natural disease, and that children who have been immunized have immunity that persists for as long as 10 years in long-term studies. In addition, women who contract chickenpox during the first or second trimester of pregnancy have a 2% chance of having a baby with the congenital varicella syndrome. A final argument is that many new immigrants are susceptible to varicella and may be candidates for immunization.

A mild case of chickenpox develops in about 15% of vaccinated children months to years after exposure to the virus. Antibodies to the virus develop in more than 90% of adults after two doses of vaccine, with 70% completely protected. Antibodies persist after vaccination for as long as ten years in 95% of healthy children and in 75% of children with leukemia and healthy adults. Important side effects from the vaccine are unusual, only 5% to 10% of vaccinees having a mild chickenpox rash that lasts a few days.

When the vaccine is first released, it will be available as a monovalent product, but within a few years it will most likely be combined with the measles-mumps-rubella vaccine and thus given twice during childhood. There is apparently no danger to immunosuppressed classmates as there has been no demonstrated spread of varicella-zoster virus from a healthy vaccinee to a contact. Spread has occurred in vaccinees who have leukemia, but even that is at a lower than normal rate (10% *vs* 80% to 90%) after household exposure and only if the vaccinee had a vaccine-associated rash.

Acyclovir

A large double-blind placebo-controlled study has shown that healthy children and adolescents who are given acyclovir within the first 24 hours of the chickenpox rash had a one-day-shorter course of varicella and less severe itchiness and pain. The recommended dose of oral acyclovir was 20 mg per kg four times a day for five days (with a maximum of 800 mg per dose) in children and 800 mg five times a day in adults. Exactly who should receive acyclovir is controversial because the drug is relatively expensive—$20 for a five-day course in a 10-kg child—and of modest clinical benefit. Immunocompromised patients and patients with notable clinical disease, such as varicella pneumonia, should not be treated with oral acyclovir but should be admitted to a hospital and given intravenous acyclovir.

Laboratory Test

The US Food and Drug Administration has recently approved a latex agglutination test that is rapid, cheap, simple, and accurate in evaluating immunity to varicella, especially in pregnant women who have had exposure to the virus and who do not know if they ever had the disease. This test is highly successful in identifying antibodies to the virus and will be available in most hospital laboratories shortly. This test will supplement or replace the currently available tests, fluorescent antibody against membrane antigens, which are costly, labor-intensive, and require a high degree of skill.

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Human Genome Project

THE human genome project is the largest organized cooperative effort ever to be undertaken in the biologic sciences. The goal is to determine the DNA sequence of the entire human genetic program—to map and sequence every gene in the body. The complement of DNA in each cell of the body comprises about 50,000 to 100,000 functional units or genes encoded by an alphabet that has only four letters: A, adenine; C, cytosine; G, guanine: and T, thymine. About 3 x 109 letters, however, are strung together. Thus, if the linear sequence of our DNA were printed out, it would require the equivalent of nearly 100 volumes of a telephone directory to display this information. Our current understanding is that only 3% to 5% of this DNA actually codes for functional proteins that appear in some cell of the body at some stage of development. The purpose of much of the remaining DNA is as yet unclear.

Many scientific and technical problems must be overcome before the goals of the project are realized. Methods to locate individual functional genes by "mapping" techniques must be refined and made efficient, and economical procedures for sequencing must be developed. Given likely improvements in such technology, this program is feasible, but only at great cost and only with many participating laboratories cooperating in the effort.

One of the first areas affected will be an enhanced ability to diagnose and treat genetic diseases. Recent discoveries about the molecular basis of common pediatric conditions such as cystic fibrosis, Duchenne muscular dystrophy, retinoblastoma, myotonic dystrophy, and the fragile X syndrome, to name but a few, are among the early disorders to yield their secrets. We have already seen the development of rapid DNA-based tests that facilitate accurate prognostic information for these and other diseases. With more than 4,000 distinct genetic diseases known, there is a long way to go. Perhaps more important, completion of the project will allow us to identify innumerable heretofore-unknown genes and permit us to study their functions and roles in normal and pathologic processes.

Mapping the complete human DNA sequence is not an end in itself, but rather a tool to be used in concomitant and subsequent investigations. Understanding which of our genes is active and involved in development processes, oncogenesis, the response to infection, and autoimmunity will permit the design of rational interventional strategies to deal with birth defects, cancer, and many other disorders both inherited and acquired. Although the biotechnology revolution has already produced a host of new therapeutics, this number can be expected to increase by orders of magnitude using this new genomic information.

Another likely benefit of research is in the area of disease prevention. Advances in human genetics are likely to identify inherited risk factors for disorders that appear in adult life following exposure to environmental insults. A knowledge of which persons have an increased chance of common diseases of adulthood developing may permit targeted interventions that prevent or ameliorate such situations.

There are many ethical and social issues raised by the human genome project. These include concerns of genetic discrimination, the lack of availability of health care insurance for people at high risk, confidentiality of testing information, and the allocation of scarce resources. It seems certain, however, that much good will come from this work. Pediatrics will be among the medical specialties to benefit earliest and most prominently.

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Sleep Positioning and the Sudden Infant Death Syndrome

INFANTS sleep position has been a topic of little interest until recently. Advice from physicians and nurses to parents about sleep position has been based on scant data and thought to be of minimal clinical importance. The sudden infant death syndrome (SIDS) is the sudden, unexpected death of an apparently healthy infant that remains unexplained after a complete postmortem investigation, including an autopsy, examination of the death scene, and review of the case history.

Over the past 15 years, published reports have associated prone sleeping with an increased incidence of SIDS. Based on these reports, physicians in the United Kingdom and New Zealand have recommended that all healthy infants should sleep in a nonprone position. The question that practicing physicians and nurses in the United States must ask is, "How good are the data that prone sleeping is associated with SIDS?"

The American Academy of Pediatrics recently convened a task force to answer this question. The task force concluded that the data are convincing and furthermore stated that "no reports showed an advantage to the prone position with regard to SIDS incidence and there are no data proving, or even strongly suggesting, that sleeping in the lateral or supine position is harmful to the normal infant."

Since 1965, 25 studies have been published that considered the relationship between sleep position and SIDS. Most of these studies involved retrospective interviews after an infant died of SIDS or prospective interviews with parents of children at high risk of SIDS. Most of these studies had methodologic limitations and were conducted in countries with infant care practices and other SIDS risk factors that differ from those in the United States. Only 11 of these 25 studies used acceptable criteria for the definition of SIDS, included adequate control groups, and produced sufficient data.

These 11 studies were grouped into three study designs: studies examining the "usual sleep position" (7), studies examining how the infant was "last put down" before death (3), and studies asking how the infant was "found" after death (1). All of these studies showed an increased incidence of SIDS in infants who slept in the prone position, with statistical significance in all but one of the 11 studies. Hypotheses to explain why an infant who sleeps prone is more likely to die of SIDS include oropharyngeal obstruction, response to hypercapnia and hypoxemia, soft porous sleeping surfaces, effects on cerebral blood flow, and overheating.

There is no evidence that in healthy newborns supine or side positioning increases the incidence of aspiration or any other serious complication. On the contrary, well-designed studies have shown that children with special needs, such as premature infants with respiratory compromise, infants with symptomatic gastroesophageal reflux, and infants with upper airway problems such as Robin's anomalad, fare better sleeping prone.

It must be emphasized to parents of healthy newborns that although associated with SIDS, prone sleeping does not cause it; and infants who insist on sleeping prone still have a low "actual risk" of SIDS. Most important, research must continue in this area so we may discern the variables that lead to this association or to disprove this association.

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Management of Intracranial and Spinal Cord Vascular Lesions in Children

MANY advances have occurred in the past five years in the management of intracranial and spinal cord vascular lesions in children. These advances include improved diagnostic abilities (magnetic resonance imaging [MRI]), new interventional neuroradiologic techniques, and focused radiation therapy (radiosurgery).

The introduction of MRI has revealed vascular lesions not seen on angiography, such as cryptic vascular malformations, also known as angiographically occult vascular malformations. These lesions have been diagnosed with increased frequency because of their characteristic appearance on MRI of the mixed-signal intensity of recent and remote hemorrhage. Cryptic vascular malformations commonly produce seizures, repetitive bleeding, neurologic deficits, and, in some cases, death. The pathologic features of these malformations continue to be debated. Most can and should be removed by modern microsurgical techniques. The reported morbidity of this surgical procedure has been low even when it involves the brain stem or the motor or language cortex.

The diagnosis and management of a second disease process, intracerebral and spinal cord arteriovenous malformations, have undergone dramatic improvement. Magnetic resonance imaging can detect and localize them, often before catastrophic hemorrhages have occurred. Interventional neuroradiologic and surgical techniques can obliterate these high-risk abnormalities. Preoperative embolization in conjunction with intraoperative angiography has made "unresectable" arteriovenous malformations surgically excisable with minimal morbidity and mortality. For children with these lesions and a seizure disorder, the malformation is surgically excised in conjunction with intraoperative motor mapping and electrocorticography to remove the seizure focus. Radiosurgery has also been successfully used in children who have arteriovenous malformations in critical areas of the brain or who are thought to carry a substantial neurologic risk with surgical treatment. Both the gamma knife and linear accelerator have shown effectiveness in treating small (less than 3 cm) arteriovenous malformations. These lesions are progressively obliterated over two to three years after radiosurgery. The incidence of transient or permanent radiation damage is in the range of 2% to 4%, but complete obliteration occurs in more than 80%. To date, there is no evidence that secondary tumors are induced as the result of radiosurgery.

Combined arterial and transvenous interventional neuroradiologic techniques have dramatically improved the prognosis for infants born with a vein of Galen malformation associated with high-output congestive heart failure, previously a fatal condition.

Despite these many advances, some rare vascular malformations are not amenable to current neurosurgical therapies. These include arteriovenous malformations that diffusely permeate the brain stem and giant vascular malformations that involve an entire hemisphere. With a better understanding of the pathophysiology of vascular lesions and continued improved technologies, even these rare lesions may soon be corrected.

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Laparoscopic Surgery

LAPAROSCOPIC surgery is gaining acceptance among pediatric surgeons and their patients around the world. Appendectomy, cholecystectomy, Nissen fundoplication for gastroesophageal reflux, herniorrhaphy, colectomy, vagotomy, and splenectomy have all been done laparoscopically. In addition, the laparoscope can be used in children to evaluate abdominal pain of unknown cause, for treating undescended testes, and for doing biopsies of lymph nodes and tumor.

To do a laparoscopic procedure, the child must be under general anesthesia with the stomach and bladder decompressed. A retractable blunt-tipped needle is inserted through a stab wound just inside the umbilicus, and a cannula is inserted into the abdomen to fill it with carbon dioxide to a pressure of 10 to 12 torr. The procedure is then done. Laparoscopic procedures have been done on infants weighing as little as 2 kg.

Laparoscopy offers the benefits to children of decreased perioperative pain, shorter hospital stays, and an earlier return to unrestricted activity including sports. Postoperative ileus is less common after laparoscopy than after conventional operations. The decrease in length of hospital stay, however, is less pronounced in children than in adults. Children are known to recover quickly after conventional operations, and many of these procedures are generally done on an outpatient basis. The average decrease in hospital stay after a laparoscopic procedure compared with an abdominal operation is one day for an appendectomy and two days after a cholecystectomy.

Possible complications include visceral injury during trocar introduction and difficulty with ventilation when patients are insufflated with too great a pressure. Carbon dioxide absorption also poses the possibility of hypercapnia with carbon dioxide narcosis and respiratory acidosis. With experience, tissue injury and major hemorrhage are rare. Many of the complications seen in adult laparoscopic procedures result from the use of lasers or monopolar electrocautery. As safer bipolar instruments are introduced, the incidence of these types of injuries will decline.

Whether a surgeon chooses to do a procedure laparoscopically depends to a large extent on experience, training, and the long-term outcome of some of the procedures. For example, the incidence for the recurrence of inguinal hernia and gastroesophageal reflux following fundoplication could be greater than that from conventional repair.

Thus far, the results of laparoscopic operations in children are encouraging. As the instrumentation improves, surgeons will gain experience with more complicated reconstructive procedures. Laparoscopic surgery will be applied more frequently in children and in many cases will obviate a more extensive surgical procedure and prolonged hospital stay.

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Depot Levonorgestrel (Norplant) Use in Teenagers

NORPLANT (long-acting depot levonorgestrel) is well established as a contraceptive for women. It is especially well suited for women who wish long-term contraception, substantial birth spacing, a method independent of self- or partner participation (compliance) or timing of coitus, and avoidance of other contraceptives that have caused important side effects (such as intrauterine devices or estrogen).

Although there is no published information on the use of Norplant in teenagers, an adolescent service has used it in hundreds of teenagers.

Norplant consists of six flexible silastic capsules containing the hormone levonorgestrel. These capsules are inserted subdermally into the underside of a woman's upper arm through a surgical incision, usually in an outpatient setting. Norplant inhibits ovulation and thickens cervical mucus, thus making it impenetrable to sperm.

Levonorgestrel has been used widely in both progestin-only and in combined oral contraceptive pills. Now with the delivery method changing from oral to implantable, Norplant has become the most effective, reversible, long-term contraceptive available. It does not rely on patient compliance and therefore virtually eliminates all pregnancies for five years. Every year, one of every ten teenaged girls between ages 15 and 19 becomes pregnant, resulting in more than a million pregnancies in this age group in 1990 alone. Thus, based on the high number of unintended teenaged pregnancies in the United States, many of which are due to a lack of compliance, Norplant may prove to be the ideal contraceptive for some teens.

Norplant is by no means a panacea. Eight of 10 women using Norplant report heavy, irregular bleeding. This common side effect is the primary reason for discontinuing its use. In addition, public health concerns have surfaced regarding the potential for a decrease in the use of condoms with Norplant and thus an increase in the risk of sexually transmitted diseases, including human immunodeficiency virus infection and hepatitis B.

Ethical issues have been expressed regarding Norplant's possible use in a coercive manner by parents or health care professionals or by its use in "targeted groups." Health care professionals must be vigilant to make sure this does not occur. Norplant is but another contraceptive choice and should be offered to teenagers as one of many options available to them. The final choice must be their own.

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Henry Gray of Legendary Textbook Fame

MARTIN DUKE, M.D.

WHAT is known about Henry Gray, author of *Anatomy, Descriptive and Surgical,*[1] a textbook published in 1858 that has since become better known as *Gray's Anatomy*? Who was this physician and anatomist whose name is remembered almost solely for this unique publication? Since most medical books have a limited life-span and "like human beings, seldom live for a hundred years,"[2] it is extraordinary that a text on anatomy, which appeared in its 30th American edition in 1985[3] and 37th English edition in 1989,[4] has not only remained a staple in medical education for over 130 years but has continued to enjoy widespread popularity. This remarkable longevity is similar to and should be compared with that of another equally significant and well-known medical landmark, *The Principles and Practice of Medicine* by William Osler.[5]

Sparse accounts of Henry Gray's life, career, and family background are contained in obituary notices written at the time of his death[6,7] and in three later articles, all very similar in biographical content, published prior to 1959.[8,9,10] Further details have since become available from correspondence in 1960 between Frederick Laurence Gray, Henry's grandnephew, and Lea & Febiger, publisher of American editions of the famous anatomy text (Letters from the archives of Lea & Febiger. Unpublished material), and from a genealogic survey of the Gray family currently in progress (Nicol KE. Personal communication). From these and other sources, a biographical account will be provided of this 19th-century English physician, the author of an anatomy tour de force that has long played a formidable role in the rites of passage for many during their medical training.

Family Background

Public documents indicate that Thomas Gray, also referred to as William or William Thomas Gray, was appointed messenger in ordinary to two English monarchs, George IV in 1821 and William IV in 1830. He resided in London at No. 8 Wilton Street, Belgrave Square, with his wife, the former Ann Walker, bequeathing the home and its contents to her when he died in 1838 (Nicol KE. Personal communication). The couple at that time had four children: Henry, the subject of this article, a physician and anatomist, and the author of the famous and durable anatomy textbook referred to earlier; Thomas William, a member of the legal profession, an Attorney of Her Majesty's Court of Queen's Bench, a Solicitor in Her Majesty's High Court of Chancery, the father of 10 children, and the grandfather of the aforementioned Frederick Laurence Gray; Marian, an unmarried daughter who died at a young age; and Robert, who trained to be a naval surgeon but was lost at sea in his 22nd year (Letters from the archives of Lea & Febiger. Unpublished material).

Medical Career

Henry Gray lived throughout his life at the family home on Wilton Street, a fact commemorated by a memorial tablet, the familiar blue plaque, affixed to the house. No original documents have so far been located verifying the date of Gray's birth, although reasoning from his age of 34 years and the year he died in 1861 as officially recorded on a death certificate at the General Register Office in London, it is, until further evidence appears, presumed to have been in 1827. There is no information available about his early years.

In 1845, Gray enrolled at St. George's Hospital Medical School where his signature appears in the Pupil's Register (Fig. 1). That same year he was the recipient of a botanical prize (Nicol KE. Personal communication). Gray thereafter maintained an association with the above

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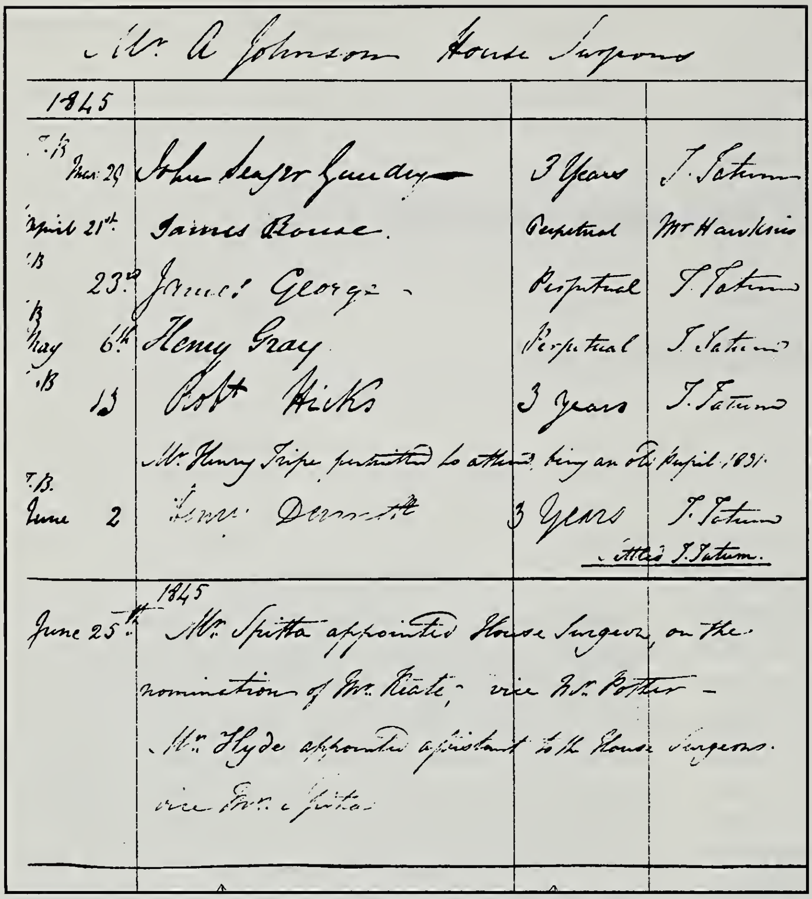
Letters from the archives of Lea & Febiger, founded in 1785.



Mr. A Johnson House Surgeons

1845			
T.B. Mar: 29	John Seager Gunday	3 Years	T. Tatum
April 21st.	James Rouse.	Perpetual	Mr Hawkins
T.B. 23rd	James George	Perpetual	T. Tatum
T.B. May 6th	Henry Gray	Perpetual	T. Tatum
T.B. 13	Robt Hicks	3 Years	T. Tatum
	Mr Henry Tripe permitted to attend being an old Pupil, 1831.		
T.B. June 2	Jno Dermott	3 Years	T. Tatum
			Attest T. Tatum.
1845 June 25th	Mr Spitta appointed House Surgeon, on the nomination of Mr Keate, vice Mr Potter — Mr Hyde appointed assistant to the House Surgeons. vice Mr Spitta		

Figure 1.—Signature of Henry Gray in the Pupil's Register at St. George's Hospital, dated May 6th, 1845. (Courtesy of St. George's Library, St. George's Hospital Medical School).

institution for the remainder of his brief medical career, serving at various times from 1850 until his death in 1861 as house surgeon, Lecturer of Anatomy, Demonstrator of Anatomy, curator of the St. George's Hospital Museum, and surgeon to the St. George's and St. James's Dispensary. He was a Member of the Royal College of Surgeons, 1848, a Fellow of the Royal Society, 1852, a Fellow of the Royal College of Surgeons, 1860, and belonged for many years to both the Pathological Society and the Royal Medical Chirurgical Society[8,10,11] (Nicol KE. Personal communication).

Medical Publications

In 1848, Gray distinguished himself with a prize-winning though unpublished essay "On the anatomy and physiology of the nerves of the human eye," a copy of which, as noted in a later publication, was placed in the library of the Royal College of Surgeons.[12] Between 1850 and 1858, he published four articles and two books, an impressive literary output during a short span of years. The earliest of these works, "On the development of the retina and optic nerve, and of the membranous labyrinth and auditory nerve,"[12] was communicated to the Royal Society in 1850 by the well known William Bowman (1816-92), Professor of Physiology and of General and Morbid Anatomy in King's College, London, and an eminent ophthalmic surgeon and renal physiologist.

Writing in an article entitled "On the development of the ductless glands in the chick," Gray made the original observation that "the spleen is developed from the surface of a fold of the 'intestinal lamina', in the form of a small oval-shaped mass of blastema, quite independent either of the pancreas or stomach."[13] Further research, aided by funds given by Parliament to the Royal Society for the promotion of science, resulted in a dissertation, *The Structure and Use of the Spleen,* for which Gray received the Astley Cooper Prize in 1853. This work was published the following year by John W. Parker and Son as a volume of 380 pages and 65 woodcuts. [14]

In describing a dermoid cyst of the ovary,[15] Gray observed that part of the "contents of this cyst consisted of a softish, white substance, the surface of which was perfectly smooth, and presented all the characters [sic] of brain. On microscopic examination it was found to consist entirely of the ordinary elements of nervous matter." This case was presented, he added, "as it may assist, to a certain extent at some future period, in explaining the law which governs the development of these remarkable tumours."[15]

A lengthy article, "On myeloid and myelo-cystic tumours of the bone; their structure, pathology, and mode of diagnosis," outlined the difficulties in distinguishing between benign and malignant bone tumors:[16]

> [T]here are a class of tumours which have their origin either upon, or in the interior of, the bones, and which bear so close a resemblance to malignant disease, that the eye fails to detect their true character. Minute examination of them, however, shows them to consist,—partly, of structures in every respect identical with some of the normal constituents of the medulla—partly, of a fibrous element mixed up with cysts of varying numbers and size—and, occasionally, of fibro-cystic structure, or some of the primordial elements of bone itself.
>
> It would thus appear, that nonmalignant tumours of bone may consist of structures which are composed entirely of a tissue analogous to one of the normal elements of bone, or of some, or all, of these tissues intermingled. [16]

Other observations by Gray in this paper—the long duration of the disease, its nonrecurrence, its confinement to osseous tissue, its slow growth—supported his contention for the "innocent character" of some of these tumors.[16]

Gray's Anatomy Text

What proved to be the most notable achievement of Gray's career, although this was obviously not apparent as such until many years later, occurred in 1858 with the publication of the first English edition of his now famous textbook "*Anatomy, Descriptive and Surgical*"[1] (Fig. 2), the initial American edition of which appeared the following year. In the opening words of the preface, Gray recorded his purpose for writing this book:

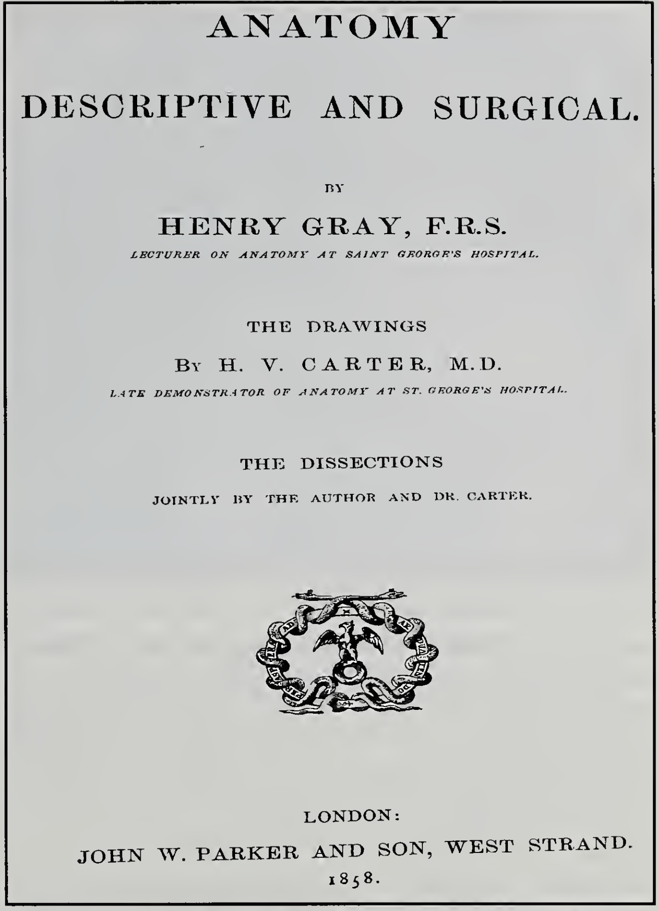
> This work is intended to furnish the Student and Practitioner with an accurate view of the Anatomy of the Human Body, and more especially the application of this science to Practical Surgery.
>
> One of the chief objects of the Author has been, to induce the Student to apply his anatomical knowledge to the more practical points in Surgery, by introducing, in small type, under each subdivision of the work, such observations as shew the necessity of an accurate knowledge of the part under examination.[1]

A book review in *The Lancet* described the first edition as having 782 pages and 363 large woodcuts, the latter prepared from original drawings by Gray's friend and associate Henry Vandyke Carter (1831-97), Professor of Anatomy in Queen's College, Bombay, and late Demonstrator of Anatomy at St. George's Hospital.[17] Comments in this review were prophetic:

> As a full, systematic, and advanced treatise on anatomy, combining the various merits of the volumes of many countries, scientifically excellent, and adapted to all the wants of the student, we are not acquainted with any work in any language which can take equal rank with the one before us.[17]

Another reviewer[18] commended the work for the "teaching power" of its visual presentations and, foreshadowing its future success, concluded that this is "a book which must take its place as *the* manual of *Anatomy, Descriptive and Surgical*" (the italics are those of the original reviewer).

A limited and not too revealing glimpse into Gray's professional life while work was in progress on the book may be found in the journals of his colleague, Dr. H.V. Carter, at the Wellcome Institute for the History of Medicine (Nicol KE. Personal communication).



ANATOMY

DESCRIPTIVE AND SURGICAL.

BY

HENRY GRAY, F.R.S.

LECTURER ON ANATOMY AT SAINT GEORGE'S HOSPITAL.

THE DRAWINGS

BY H. V. CARTER, M.D.

LATE DEMONSTRATOR OF ANATOMY AT ST. GEORGE'S HOSPITAL.

THE DISSECTIONS

JOINTLY BY THE AUTHOR AND DR. CARTER.

LONDON:
JOHN W. PARKER AND SON, WEST STRAND.
1858.

Figure 2.—Title page of the first English edition of Henry Gray's *Anatomy, Descriptive and Surgical,* published in 1858. (Courtesy of Harvey Cushing/John Hay Whitney Medical Library, Yale University, New Haven.)

Gray's Death

While attending a nephew for smallpox, Gray became fatally ill with the disease.[8,9] His death certificate, referred to earlier, recorded that he died from "confluent smallpox" on June 12th, 1861, at the young age of 34 years. Noted on the certificate was the interesting comment that he had been vaccinated in childhood. The age of 34 years was also inscribed on Gray's tombstone at Highgate Cemetery in London, although death was indicated to have been on June 13th, a day later (Fig. 3). Strangely enough, the burial register for Highgate Cemetery, notwithstanding the inscription on the tombstone, stated his age as 35 years (Nicol KE. Personal communication), while obituary notices reported that he was 36 years old when he died.[6,7] Whether there was a mysterious reason for these inconsistencies, or whether they were merely the result of human error and carelessness, may never be clear and can only be speculated upon.

Gray, a bachelor, was engaged at the time of his death to a Miss Winter (Letters from the archives of Lea & Febiger. Unpublished material). No further documents have been located that provide other details about his personal life. Ann Gray, his mother, died in 1866 at the age of 74, five years following her son's death, and was interred at the same gravesite (Fig. 3). Known relatives of Henry Gray alive today are descendants of his brother Thomas William (Nicol KE. Personal communication).

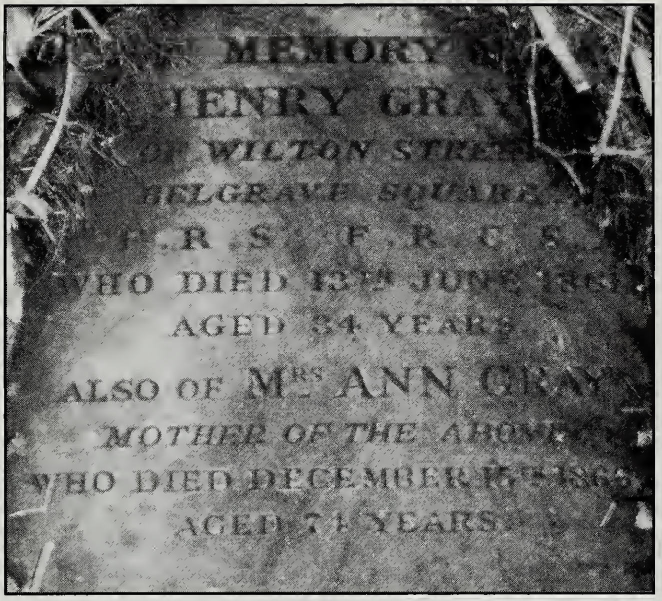


Figure 3.—Tombstone of Henry Gray and of his mother Ann Gray at Highgate Cemetery, London. The inscription reads "In Memory of Henry Gray of Wilton Street, Belgrave Square, F.R.S., F.R.C.S., who died 13th June 1861, aged 34 years. Also of Mrs. Ann Gray, mother of the above, who died December 15th, 1866, aged 74 years." (Photo by S. Hyman).

Founder of an Institution

Since they were first published in the 19th-century, both the American and English versions of Gray's anatomy textbook have been frequently and skillfully revised by many well known editors. With all the changes and additions that have occurred, Gray's actual contributions would probably be difficult to find in current editions of this work.[3,4] It may be appropriate, therefore, when establishing his place in medical history, to consider this excerpt from an article by the medical historian F.N.L. Poynter: "He [Gray] was once the author of a book, but he might more truly be regarded as the founder of an institution."[19]

Acknowledgments

The author thanks Mr. Keith E. Nicol of London, England, for providing information from a genealogic survey of the Gray family that he is currently undertaking, and Lea & Febiger, publishers, founded in 1785, for making available from their archives unpublished letters written to them by Frederick Laurence Gray.

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Members of the Connecticut State Medical Society reading papers before other organiza-tions are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **INFORMATION FOR AUTHORS**. This material may be obtained from the Journal office (also printed in *Connecticut Medicine*). Adherence to the instructions will prevent delays both in acceptance and in publication. A copy of the manuscript on floppy disk (3-1/2" or 5-1/4") should be submitted along with the hardcopy.

Please send them to:
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Dealing with Disciplinary Hearings Before Connecticut's Department of Health Services

RICHARD R. BROWN, ESQ.

ONE day you open your business mail only to be greeted by a notice from the State of Connecticut, Department of Health Services, hereinafter referred to as "department." The letter cites a few statutory provisions and then notifies you that the department is conducting an investigation with reference to one or more of your patients. The letter will request that you provide the department with certified copies of all of the patient's records. Additionally, the department will request a statement of the care and treatment rendered by you to the patient. Finally, the department may request that you answer specific questions in reference to your treatment.

The department may take your response (after having removed your name), coupled with the statement of the patient or complainant, along with the record and forward the same to a physician who, you hope, practices in the same specialty as you do. This "expert" will issue a report to the department. It is important to be detailed in your response to the department, supplying all documentation supporting your position.

It may come to pass that your response, coupled with the record, may convince the reviewing physician that the claim of wrongdoing against you is meritless. Section 19-2a-12 of the Regulations of the Department of Health Services, hereinafter referred-to as "regulations," provides that the department may dismiss any alleged violation if there is insufficient evidence to proceed.

Assuming the department feels that there is a sufficient basis to proceed, you, the practitioner, will be given the opportunity to attend an informal "compliance meeting." In my opinion you should have retained counsel by this point. This informal conference is your last opportunity to convince the department to dispense with formal proceedings against you. Also, if there is merit to some violation of state law or regulation, it may be your last opportunity to work out a resolution with a minimum of publicity, risk, and cost. Do not be fooled by the misnomer "compliance conference," since in many situations one cannot comply with an event which has already occurred.

If you retain counsel, he is permitted to attend this informal hearing and to offer additional documents (such as *your* expert's report) on your behalf. This means that prior to any such meeting you should have met with your attorney and reviewed with him the entire file. He should have ideas as to how to best present your side of the treatment of the patient. At the informal hearing, which is *not* being recorded and which does *not* adhere to the rules of evidence, your attorney should be able to obtain a copy of the report issued by the department's expert along with a copy of the original complaint against you. This information is invaluable in defending against any charges. Also at the informal conference if there is merit to the claimed violations, this will provide you and your counsel with the opportunity to minimize any sanction which the department may want to impose upon you, the practitioner. For example, while there may have been a violation, it might not have been as severe as perceived. In other situations where your protocol is called into question, you may be able to demonstrate that you have taken corrective steps to remedy the situation. While this will not absolve the physician of any wrongdoing, it may mollify the department in terms of the nature of the sanctions. Many cases are resolved by the use of a "consent order," which may or may not call for admissions of wrongdoing on your part.*

RICHARD R. BROWN, ESQ., former assistant attorney general and former prosecutor for the State of Connecticut. He is a senior partner in the Hartford law firm of Brown, Paindiris & Zarella.

*Before one agrees to *any* consent order or penalty, one needs to determine any repercussions any admissions or finding might have with both state and federal Medicaid and Medicare agencies as well as with any HMO with which the practitioner is affiliated, and also with the underwriting department of the physician's malpractice insurance carrier, come next renewal.

Assuming the matter cannot be resolved on any informal basis, the department will set it down for a formal hearing. Prior to said hearing you will receive a notice which will outline the specific conduct under investigation. It is the job of your counsel, if necessary, to move for more specific statement. At the hearing your counsel will have the opportunity to cross-examine the departments' witnesses including their expert and the complainant. You also will have the opportunity to present any documents and witnesses (including expert witnesses) supporting your position. It is incumbent upon you to make a record of your legal defense at this hearing. Should you appeal any decision to the Superior Court (as is your right), the Court will *only* review that which is "on the record." You are not entitled to a new hearing. In other words, the issue on appeal is simply whether you received a fair hearing consistent with due process of law. It is not the function of the Superior Court to retry the case.

Because of the importance of the hearing every effort must be expended to insure that your position is made clear to the Connecticut Medical Examining Board, which presides over the department's hearings. You should know that not all members of the Board (there are 12) are physicians. Indeed, C.G.S. Section 20-8a(f) mandates that at least one member of any panel hearing charges shall be a "public member"—eg, John Q. Citizen. Furthermore, there is no guarantee that any of the physicians on the three-member investigating board, which will render a report to the entire Board, is a physician practicing in the same area of medicine as the responding physician. Hence it is extremely important to structure a defense using language and documents geared toward a nonspecialist.

At the conclusion of the hearing the panel will issue a proposed findings of fact, conclusions of law, and a recommended decision. Your counsel under C.G.S. Section 4-179 will have the opportunity to review this decision, file exceptions, and present briefs to the Board. The Board after due review may dismiss some or all of the charges for lack of sufficient evidence of a violation. Should there be a finding of any violation, under C.G.S. Sections 19a-17 and 20-13a, the Board may revoke or suspend the physician's right to practice, censure the physician, or issue a letter of reprimand, the penalty being theoretically commensurate with the wrongful conduct and prior history of the physician. Further, the Board can fine a physician up to 1,000.00 dollars, require additional professional education, place a licensee on probation, and/or limit the physician's area of practice. Should a penalty be imposed you have the right to appeal either the findings of the Board or the sanctions imposed to the Superior Court. However, any such appeal does *not* act as a stay of the decision and penalties. Accordingly, your attorney must seek such a stay in Court promptly after the Board's decision is rendered.

In my experience, I have learned that there are things that you, the practicing physician, can do to minimize the possibility of finding yourself in the aforementioned position. Foremost, you must properly document your file. Sadly, in this era of litigious patients, the practitioner needs to make certain that each patient's record is thorough and complete. This would include specific detailed statements of the patient's condition and documentation of any examination and any treatment rendered. When a patient fails to attend scheduled appointments, such information should be duly recorded. Additionally, instructions given to patients concerning follow-up care must also be noted.

Additionally, and perhaps more importantly, the physician needs to learn to communicate effectively with the patient. Many of the complaints filed against doctors could be avoided had the practitioner taken a few extra moments to insure that the patient fully understood his condition and the necessary treatment.

In sum, both the State Health Department and patients are holding physicians more accountable for their actions. The public more than ever is resorting to filing complaints against the practitioner with the Department. Your license, reputation, and practice are all put into jeopardy each time such an event occur. It has become incumbent upon the provider of medical services to be aware of what needs to be done both before and after a letter from the State Health Department is received. Knowledge in this area can prevent many potential complaints from being filed. Additionally, in those situations in which you are called before the Department you can minimize the impact upon yourself and your practice by the manner in which you deal with the situation. Ultimately, proper documentation and effective communication will always prove to be the physician's best defense.

Physician Practice Acquisitions and Health Care Reform: Meeting the Office of Inspector General's Fraud and Abuse Concerns

STEPHEN E. RONAI, ESQ. AND JOHN T. DEL NEGRO, ESQ.

AS health care providers await the details of the president's health care reform program and the likely prospect of adjusting to some form of managed competition, hospitals have intensified their focus on the acquisition of physician practices and the creation of physician employment relationships with hospital-controlled entities as a first step in the creation of vertically integrated delivery systems. Unfortunately, physician practice acquisition, as a prelude to vertical integration, has now been made more difficult by the recent assertion by the Office of Inspector General (OIG) of the Department of Health and Human Services (HHS) that the payment and employment terms of certain practice acquisitions may violate the prohibitions of the anti-kickback statute. This initial hard-line position on the acquisition of physician practices, which appeared in a 22 December 1992 letter from the OIG's chief counsel to the IRS's general counsel, has been tempered somewhat by the OIG chief counsel's recent clarification of his initial position. However, the continued collaboration of the OIG in the enforcement of its fraud and abuse policy, in tandem with the IRS's intensified audit oversight of hospitals' section 501(c)(3) exemptions, requires hospitals and physicians to approach these transactions by directing special attention to asset valuation issues.

The Inspector General's Letter to the IRS

The OIG's letter focused its criticism on a prototype physician acquisition format typical of transactions which it viewed as "sophisticated disguises" for hospitals to share the profits from physician referrals in order to induce physicians to steer patients to the hospital: The hospital or another acquiring entity makes a large initial cash payment to the physicians which is described as a payment for the purchase of the assets of the practice. Subsequent to the sale, physicians generally receive periodic payments pursuant to an employment agreement, since the seller-physician becomes an employee of the hospital or the purchasing entity or otherwise enters into an employment agreement to provide services to hospital patients. These payments are described as compensation for the services rendered to patients by the physician. While the acquisition of physician practices can be accomplished through a variety of programs, the OIG's letter noted critically that the end result in each case is the common ownership or control of both the hospital and the physician practice by a single entity.

The anti-kickback statute, which imposes criminal sanctions, civil money penalties and exclusion from both the Medicare and Medicaid programs, is violated if one purpose of any remuneration provided or paid for patient services can be viewed as an inducement for the referral of future Medicare or Medicaid business, even though the payment arrangement and the patient treatment modality is otherwise justifiable.[1] Physician practice acquisitions implicate the anti-kickback prohibition, the OIG noted, because payments made for the nontangible assets of the practice and the post-acquisition employment payments are often merely remuneration paid to retain the physician's existing patients or to induce the physician to refer new patients to the hospital.

STEPHEN E. RONAI, ESQ. is chairman of the Health Care Department and JOHN T. DEL NEGRO, ESQ. is chairman of the Corporate Department of the Hartford and New Haven law firm of Murtha, Cullina, Richter and Pinney. They represent the interests of physicians and hospitals with respect to government regulation, including physician practice acquisitions, fraud and abuse counseling, third party reimbursement issues, and medical staff and antitrust issues.

The OIG's letter expressed doubt that any payments made to the seller-physician other than the initial payment for the practice's "hard" assets reflect a payment for anything more than the physician's patient referral stream. The OIG emphasized that commonly accepted methods for determining the fair market value of a physician's practice's intangible assets—what a willing seller would pay to a willing buyer—are not applicable to a relationship where it is in the purchasing hospital's economic interest to pay a premium for the value of the physician's patient referral base. The OIG questioned whether the allocation of payments to specific categories of intangible assets is bona fide or whether those payments are actually being made for the value of the patient referral stream. Many acquisitions involve allocation of the purchase price: (1) to goodwill, (2) to the value of an ongoing business unit, (3) to covenants not to compete, (4) to exclusive dealing agreements, (5) to patient lists, or (6) to the physician's patient records. The OIG considered payment for these types of intangible assets to be questionable, where there is a *continuing relationship between buyer and seller* and the buyer relies on future referrals from the seller.

The OIG's other principal concern dealt with the manner in which the physician-employee is compensated for patient care services rendered subsequent to the transaction. Pointing to the existence of an exemption in the anti-kickback statute for payments made by an employer to an employee, the OIG's letter admonished that only *bona fide* payments to an employee for "the provision of covered items or services" are entitled to the anti-kickback statute exemption, and that payments which exceed the reasonable value of a physician's services may in reality be payments for referrals which would not, in the OIG's opinion, be covered by the employee exemption.

Subsequent Clarification of the OIG's Initial View

Appearing at the Institute on Medicare and Medicaid Payment Issues sponsored by the National Health Lawyers Association (NHLA) on 25 March 1993, D. McCarty Thornton, the OIG's chief counsel, beat a partial retreat from the OIG's initial position, since literal enforcement of the OIG's 22 December 1992 informal pronouncement would have created a substantial impediment for any hospital seeking to move into an integrated delivery system via physician practice acquisition. Thornton noted that the OIG recognizes that "integrated delivery systems are the way of the future and that the OIG won't stand in the way."[2] But he also expressed concern that the formation of integrated delivery systems not serve as a vehicle to permit physicians to be paid for the future flow of referrals. Thornton acknowledged that the original letter to the IRS was "... written in somewhat aggressive terms ... and was meant to blow the whistle" on practices having the potential for fraud and abuse under the Medicare and Medicaid anti-kickback rules. But he also acknowledged, importantly, that a hospital can pay for the value of intangible assets that constitute a portion of the value of a physician practice, provided that there is no payment to physicians for "pumped up" or unreasonable asset values.

Thus, the OIG's most recent admonition seeks to "wring out"[2] from practice acquisition payments the portion of the sales price that constitutes compensation for future referrals—whatever that may be. There is some middle ground, Thornton acknowledged, for arriving at a fair valuation figure for these intangibles through a reasonable valuation method, although HHS has not developed an approach to reaching it. Perhaps one line of demarcation, he suggested, would be the price that a new physician would pay a retiring doctor for his practice.

Meeting the OIG's Fraud and Abuse Concerns: Practical Suggestions

Even the modified position of the OIG chief counsel is beset by conceptual difficulties. For example, the OIG's "fair market value" test for considering the legality of compensation of post-acquisition physician-employees may be without legal basis, since the only test in the fraud and abuse compensation safe harbor for payments to an employee provider is solely that the person must be a "*bona fide* employee," and that safe harbor contains no discussion of valuation. Moreover, once a physician becomes either a *de jure* or *de facto* employee of a hospital, it is questionable whether the fraud and abuse prohibitions have any effect.

Notwithstanding the conceptual difficulties, the OIG's concerns about the potential fraud and abuse violations inherent in physician practice acquisitions cannot be ignored. Fortunately, these concerns can be met if careful attention is paid to the valuation of the physician's assets and to a detailed enumeration of the physician's duties in the post-acquisition employment contract. The modified position of the OIG is that payments for a practice by a hospital that exceed what a physician purchaser may pay will be suspect. The rationale for this position might be that one physician would be willing to pay another for the value of the anticipated stream of patients who are in need of services that the physician will provide. When a hospital absorbs a private practitioner's practice, however, it is hoping to capture not only the opportunity to provide the outpatient services that the physician provides, but also the opportunity to provide inpatient services when the physician's patient needs them. Thus, a hospital is paying for an "inpatient service opportunity" and would generally be inclined to pay more for a physician's private practice than another physician would be willing to pay for it. By focusing its concern on this "incremental" value, the OIG has left room for hospitals to continue to acquire physician practices, provided that they proceed carefully.

In general, a hospital should not proceed with any physician practice acquisition without preparing a detailed analysis of the value of the practice. The hospital should commission a separate appraisal of the equipment and other tangible assets of the practice. The hospital should then determine the purchase price that another physician would be willing to pay for goodwill, going concern value, noncompetition agreements, patient lists and patient records. The hypothetical purchase price should be based on actual transactions known to the hospital or hospital-retained consultants. A general rule of thumb is that a physician's practice is worth about one-half of the annual gross revenues, but this information should always be confirmed by independent advisers.

With respect to the OIG's focus on the issue of excessive payments for the physician-employee's postclosing services, the hospital should be careful that payments to all hospital-based or controlled physicians are internally consistent. If necessary, the *bona fides* of the employment relationship can be buttressed by requiring the physicians to perform administrative duties or recruitment services in addition to their patient care obligations.

The OIG's fraud and abuse focus on physician practice acquisitions also creates potential problems for hospital financings, since the IRS has made clear in its 21 December 1992 General Counsel Memorandum (GCM 39862) and in its Hospital Audit Guidelines (1 April 1992) that violation of the anti-kickback statute is inconsistent with the continued validity of that hospital's section 501(c)(3) exemption. Thus, if a section 501(c)(3) exempt hospital has consummated a physician practice acquisition involving a payment for intangibles as well as a postclosing employment arrangement, the availability of a clean legal opinion attesting to the hospital's continued qualification for the section 501(c)(3) exemption will be rendered more difficult. Therefore, any hospital considering a tax-exempt revenue bond issue should undertake a review of its preexisting physician acquisition agreements as well as its physician recruitment agreements. Adequate time must be reserved in the due diligence process to attempt to renegotiate or modify any contractual provisions that may contravene both the OIG's and the IRS's concerns for potential violations of the anti-kickback statute—assuming that such renegotiation is in fact possible.

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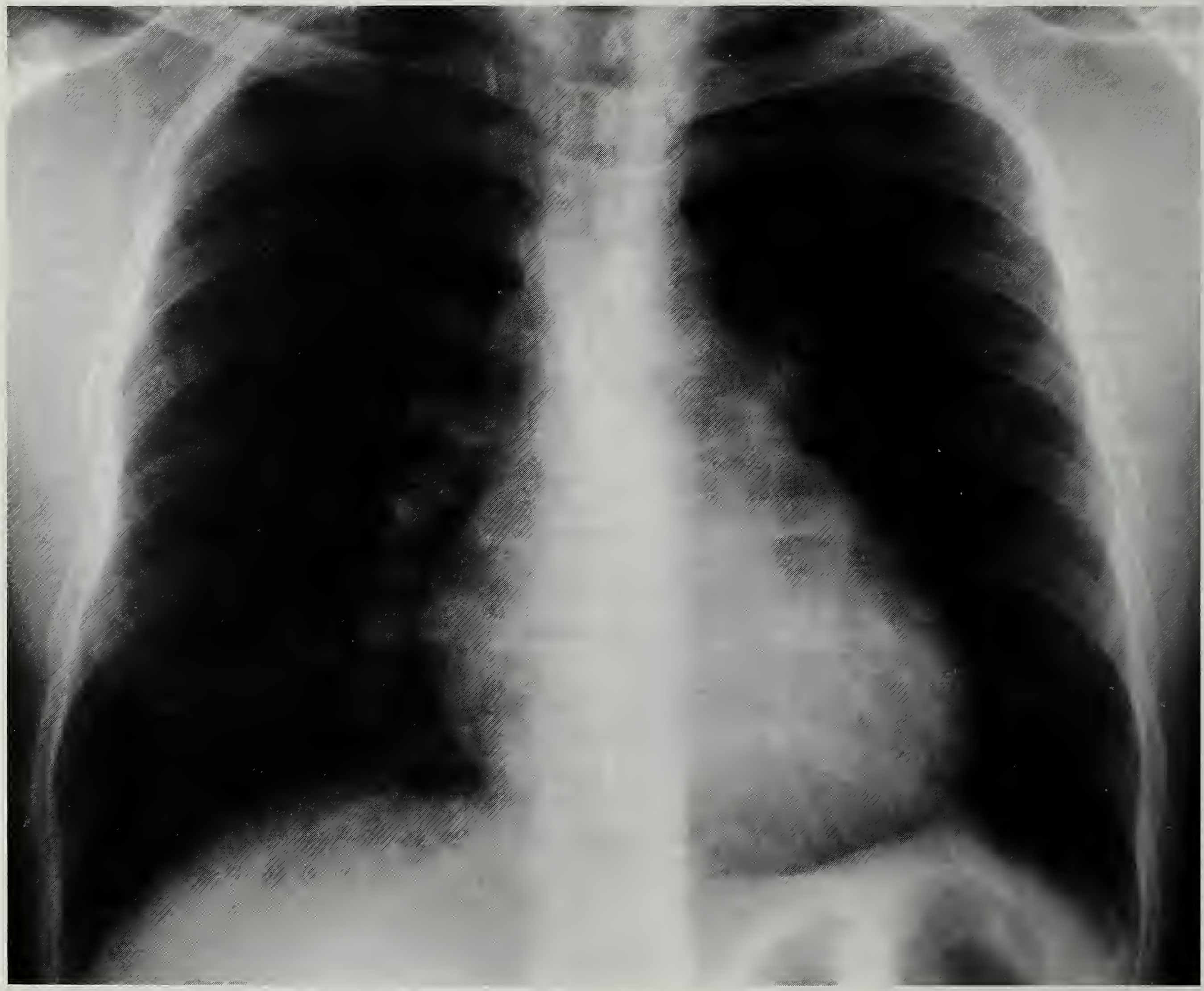

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Ruminations of a Teaching Surgeon

ROBERT A. CHASE, M.D.

I AM highly honored and deeply grateful to be the recipient of this singular honor from the California Medical Association.* I would like to take a rather lighthearted approach to reviewing my world of medical education.

Laroff's credo says:

"It is not so important to be serious as it is to be serious about what's important."

One of the strong memories in my career was coming to California and Stanford University in 1963 as Chairman of the Department of Surgery. My vision over the years had been that except for the captain of an ocean-going liner, the last reigning monarch was the Chairman of a Department of Surgery. "Power, power at last," I thought to myself. So as an early initiative, I phoned the emergency department, the intensive care unit, the recovery room, and various areas to check on their facilities and readiness. I called the operating room and got the doctors' dressing room orderly. "Doctors' dressing room," said he. I said, "I would like to inquire about locker facilities for surgeons." "Well," he responded, "we have some open half singles for students and residents, some slightly rusty back lockers for attendings and visitors, and for the fat-assed professors, we have some new combination, secured, full length lockers." "Do you know who this is?" I questioned. "Nope," was his response. "This is Professor Chase, new Chairman of the Department of Surgery," said I authoritatively. "Do you know who this is?" he inquired. "Well, no," I answered. "Well, goodbye, fat ass,'' he retorted as the phone clicked off.

Memories

I would like to go back 47 years to 1943 when I started in the study of medicine. It was, in Dickens's words, "... the best of times and the worst of times," before ball point pens, pantyhose, and credit cards. Before hair dryers, second opinions, and touch-tone telephones. We didn't dare say condom out loud but had no fear of referring to hearts as young and gay. It was an age when Madonna was a statue at the local Catholic church, third-party carriers helped with your luggage, and marketing was something you did with a basket.

It was an era when TLC didn't mean thin layer chromatography and HMO was Haley's famous laxative. MR meant mister and medically indigent adults were not MIAs. MIA had the jarring and depressing meaning that it had again during the Gulf war. APCs were not armored personnel carriers. In those days physicians knew who Osler and Halsted were and fear of malpractice was not a driving force in medical decisions. Podiatrists did podiatry, general surgeons were general, and the only treatment in gastroenterology was some variation of the Sippy diet, whereas today's fiberoptic endoscopy presents endless opportunities to look into oneself. Less than a radical mastectomy would have been malpractice—if there had been malpractice. A hand-held calculator was a slide rule and AIDS identified people who helped nurses or wore pink frocks. Closets were not for coming out of. Gallbladders were removed by incision and dissection.

It was before "thank you" was said by flashing lights at the toll booth and when "have a nice day" meant have a nice day. Affirmative action was a vote at the town meeting.

ROBERT A. CHASE, M.D., Chief, Division of Anatomy, Stanford University School of Medicine, Stanford, California.

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Reprinted by permission of the *Western Journal of Medicine*: Chase RA: Ruminations of a Teaching Surgeon. 1992; March; 156:314-5.

*Robert A. Chase, M.D. received the 1991 Golden Apple Award, presented by the California Medical Association to recognize exceptional physicians who have made a lifelong commitment to teaching.

It was before MRI, RVS, CME, and PPO. Oncology wasn't even a word.

We surgeons didn't know we were in a noncognitive specialty. There were no lasers, surgical staples, vascular grafts, or joint prostheses. Digital subtraction meant finger amputation, lithotripsy was a technique for jumping rope, and ultrasound came from jukeboxes.

A hospital day cost $65, and an appendectomy brought $125 maximum. Free care was freely given and Robin Hood ordered the behavior of administrators. Now it's rob the rich and pay the lawyers. It now costs more to go to the hospital than it did then to go to medical school. We didn't call firing people down-sizing or being de-selected, outplaced, or nonpositively terminated, and a set of objectives was not a paradigm. Quality assurance was the wear guarantee that came with interwoven socks.

I would have thought a suppressor oncogene was an auto part or a radio tube. There were no contact lenses, throwaway syringes, cyclosporins, monoclonal antibodies, or recertifications. A chromosomal short arm could have been misinterpreted by us Army docs.

Come and gone in my years have been—Wangensteen's gastric freezing, Smithwick's total sympathectomy, Gillies' tubed pedical flap, and a whole host of procedures now dealt with medically or radiologically.

In our days kids played doctor—now they play specialist and their little doctors' kits come with a malpractice insurance policy. In the ER they used to take your vital signs—now they take your Blue Cross number.

We were grossly deficient in what we could do physically for our patients—no open heart surgery, no endoscopic surgery, no microsurgery, no transplant surgery, but medical care meant caring for the patient. In many ways—the best of times.

What has continued as best for me is the privilege of teaching. There is real pleasure in watching and helping students develop from freshmen who think the cesarean section is a district in Rome to seniors who understand the details of genetic recombinant DNA therapy far better than I.

It has been fun to observe the cyclic changes in medical school related to

- Grading versus pass/fail
- Core curriculum versus electives
- Honors versus no honors
- The early introduction to clinical medicine
- Organ systems approaches
- Problem-oriented learning
- Thesis requirements
- Attitudes towards the National Board Examinations

There are lots of experimental curricula as at Case Western Reserve, McMaster University, Miami, and Harvard with their "New Pathway." Our generation can be characterized as one offering French in kindergarten and remedial English in college. In academic medicine we see evidence of this when reading histories. Here are some entertaining chart entries:

This gentleman urinates around the clock every four hours.

A 54-year-old woman arrived with abdominal distress— she has constipation on the one hand and diarrhea on the other.

This 30-year-old male is married—no other serious illness.

Or a prescription I saw that read, "Tenactin suppositories, dispense 24 (such) Sig: Insert one every four hours until exhausted."

What incredible satisfaction I have had in watching the unfolding of the careers of students and trainees. Recommending them for the next step in their careers is generally one of the pleasures. Yet, in today's era of freedom of information, letters are available to the student or trainee. This has led to what Lederer calls the "mangled modifier" strategy for letters of recommendation. Watch for varying interpretations in letters describing students. For example:

For the lazy student

"You'll be lucky to get Harvey to work for you," or

"I can't recommend him too highly."

For the person in trouble with the law

"He is a man with many convictions."

For the heavy drinker

"I spent many happy hours with Hubert."

Participating as a CME instructor is always profitable educationally, since one learns from the participants. Although ours has been identified as a learned profession, its proudest attribute is that it is a *learning* profession.

As a teacher, do I have concerns? Of course I do. I have noted with some alarm the drop in the number of applications to medical school—about 31% over the last decade with an applicant-to-billet ratio going from 3.5 applications to one position in 1950 to 1.6 to one in 1990. Fortunately, this year's application numbers have started to rise. Disturbing, however, were data from the American Association of Medical Colleges survey of students who took the MCAT, then did not apply to medical school. Of these, a half had chosen alternative careers, and 30% of these were advised against medicine by physicians predominantly from the older generation.

I am concerned at the growing average indebtedness of our graduates. In 1989 the average debt for medical school graduates was $42,374—nearly twice what it was in 1987.

I worry that medical schools have become more dependent upon faculty-earned practice funds. In 1971 practice funds furnished 12% of total school revenues, whereas in 1990, 43 % of revenues came from faculty practice earnings.

The Future

In the years ahead, our profession generally has enormous new problems to solve. A simple listing of a few of the issues might include

- The continuing struggle to meet the health care needs of our citizens versus the reality of budget constraints and deficit reduction
- Over 30% of babies admitted to inner-city intensive care units are born to "crack" abusing mothers, and 2% or 3% are positive for the human immunodeficiency virus (HIV)
- An estimated 1 million people in the United States are HIV-positive
- 37 health care workers are thought to have contracted HIV infections on the job, largely from needle sticks
- 14% of medical schools report medical students or residents who are HIV-positive
- 40 surgeons and 144 dentists are known to have the acquired immunodeficiency syndrome, and the Centers for Disease Control estimates at least ten times this many are HIV-positive
- Old diseases such as measles are reappearing—13,000 cases in the United States in 1989
- The whole issue of positive euthanasia
- The problem of physician participation in executions for capital punishment
- Sex between physicians and patients, said to have an incidence of 5% to 10% among psychiatrists
- The need for guidelines on ethics of various drug house gifts and favors
- The growing evidence of fraudulent research

And the list goes on.

Above all, we must not let problems, challenges, and advances cloud those wonderful attributes of our profession and its activities that are changeless. Quantitatively, most clinical medicine is straightforward. It is our privilege to help most patients because they have simple curable disorders, and it is equally important that we offer effective reassurance to the one-third to one-half of patients coming to us who have no physical or biomedical ailment. In academia we are inclined to search for zebras.

"I'm practicing medicine the way I think it should be practiced, sans the paperwork and administrative overload."

Owen Brodie, MD, joined CompHealth's locum tenens medical staff in 1989, after 21 years in private practice. Since then he's worked in temporary assignments in state facilities, filled in for attending physicians, covered for private practitioners across the country.

A pilot. A historian. A board-certified psychiatrist. Southern to a fault. Owen Brodie knows...

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Responsibility at a distance as in "managed care" will never substitute for a physician's responsibility for his or her patient. I find that the apparent ease with which a problem may be solved is directly proportional to one's distance from the problem. Since a physician knows more than anyone else about his or her patient, he or she is, by definition, captain of the health care team.

Next to being shot at and missed, nothing is really as satisfactory professionally as a good surgical outcome recognized by both the patient and the surgeon. A poor result makes one wish that the shot had not missed.

Despite the fact that we may all become salaried employees with rules based on cost, faced with ethical issues of monumental proportions because of emerging technologies, and despite the specter of malpractice litigation and diminishing public respect, as well as demands of society through third-party carriers and government, despite all of these, the most precious gift of all—the relationship between physician and patient—remains and always will remain in our hands.

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Dedicated Volunteers Provide Medical Aid for Stamford's Homeless

THE ADVOCATE

LEONARD Vinnick is in a comfortable place. With a thriving Stamford medical practice, the 58-year-old doctor could split his time between his family, a well-appointed midtown office, and the country club of his choice.

But for Vinnick, who has practiced internal medicine in Stamford for 24 years, providing quality medical care for the city's homeless is a passion.

Jim Liebmann, left, who broke his right ankle, is questioned by JoAnne Fortmann, a volunteer registered nurse, at the Pacific House shelter in Stamford. Dri. Leonard Vinnick is at right.

Vinnick is a crusader for the Health Care Coalition for the Homeless, enlisting physicians and nurses in the Stamford area to provide volunteer treatment for patients who lack the basic necessities most people take for granted.

"They have no transportation, they have no telephone, they have no access to traditional medication, they have no money, they have no insurance," Vinnick said, explaining why many homeless people fail to get the medical care they need.

While in many cases clinics and emergency rooms will provide care, Vinnick said that homeless people tend not go where the treatment is. They shun bureaucracy, medical forms, and questions about their life-styles and backgrounds.

Since 1990, under Vinnick's leadership, the coalition's volunteer doctors and nurses have been treating residents at the Pacific House shelter in Stamford twice a week.

JoAnne Fortmann, a registered nurse who regularly treats patients at the Pacific House shelter, has been treating the homeless in Stamford on a voluntary basis for several years.

"With this population, a lot of times if you tell them they need an antibiotic, they are not necessarily going to get it," Fortmann said.

But at the Pacific House shelter, residents are treated for a range of illnesses from colds, flu, hypertension, and diabetes to skin rashes, tuberculosis, and AIDS. Doctors counsel the patients and prescribe medication, which is provided free of charge at the shelter.

By providing medical attention early, Fortmann, said the coalition's volunteers have been able to prevent, in some cases, the onset of pneumonia and other acute illnesses, reducing the need for patients to be hospitalized.

Vinnick said local doctors, hospitals, and pharmaceutical companies have donated laboratory services and prescription drugs as needed.

A study released by the Bush administration reported that government programs fund fewer than 40% of the estimated one million Americans who are homeless. Philanthropic and charitable organizations are left to provide care for the rest.

Dr. Joseph Connelly volunteers to treat patients at the Pacific House shelter about two hours each week. Connelly, the director of the family practice residency

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program at St. Joseph's Medical Center, said treating the homeless is personally and professionally rewarding.

"It gives them a sense that people care," Connelly said.

Ray Anderson, a former construction supervisior, has a heart condition and received nitroglycerin from Dr. Vinnick at the Pacific House shelter.

"They treat you as if you were paying your own money," Anderson said.

Jim Liebmann, an unemployed rare books and manuscripts appraiser, recently broke a bone spur in his foot and must use crutches while it heals. He has lived at the shelter for three weeks.

"This is my first Thanksgiving being down and out," he said last week.

Vinnick and his volunteer medical staff, Liebmann said, have been perceptive and sensitive.

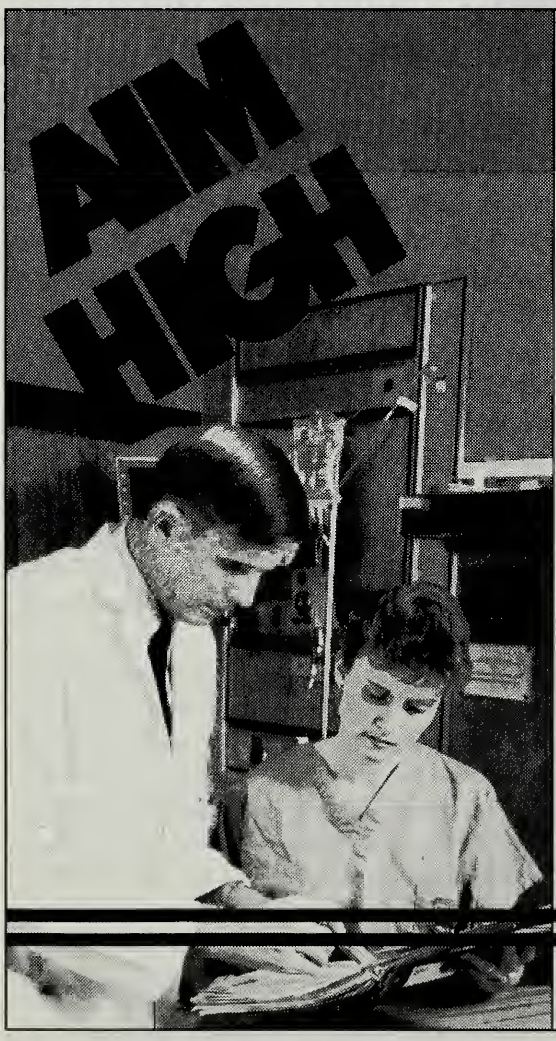
"You can't buy that kind of attitude, Liebmann said. "You can't by compassion."

Regrettably, Vinnick said, fewer than 10 doctors and nurese in the Stamford area have volunteered to treat the homeless. The coalition needs pediatricians and other specialists.

"Physicians can do something that other people cannot do," he said. "We should use it to help people who are less fortunate."

According to a report by the National Coalition for the Homeless, six homeless people died in Stamford in 1991.

"This problem is very serious," Vinnick said. "If we don't care about other people, this society is going to be in bigger trouble than it already is."



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AIR FORCE

Do No Harm

JANE M. ORIENT, M.D.

This article is adapted from a statement by Dr. Orient on behalf of the Association of American Physicians and Surgeons before the White House task force on health care reform, George Washington University, Washington, D.C., March 29, 1993.

I am Jane Orient, Executive Director of the Association of American Physicians and Surgeons. I am in the solo practice of private medicine in Tucson, Arizona. I speak as a physician who is bound by the Oath of Hippocrates.

By my Oath, I must refrain from doing harm to my patients, and I must abstain from mischief and corruption. I may not promise my patient a three-minute remedy and then give her a deadly potion.

Furthermore, I must "follow that method of treatment which according to my ability and judgment I consider for the benefit of my *patients*." I may not subordinate my judgment to that of a secret council. I may not sacrifice my patient's welfare to a social agenda. I may not deny my patient a cancer treatment or heart surgery so that his resources can be used to benefit someone with a higher social priority, such as a person who is entitled to a free checkup.

I want the best medical care for my patients and for all Americans. We cannot provide the best until we get the cost down.

We will not lower costs by abolishing the Oath of Hippocrates and destroying the patient-physician relationship. The Oath of Hippocrates dates to the fifth century B.C.; the acceleration of American medical costs dates to 1965.

Costs skyrocketed because the government got *into* medicine. Costs will not decrease until we get the government *out* of medicine:

out of private physicians' offices, where regulations are driving physicians out of business, especially in rural areas and inner cities;

out of hospitals, where compliance costs add a huge administrative overhead;

out of the pharmaceutical industry, where government adds $250 million to the cost of marketing a single new drug;

out of the medical marketplace, where government intervention has destroyed the normal economic mechanisms that keep costs reasonable in a free market.

We need to bring *patients* back *into* the financial equation. We must allow *patients* to benefit from their prudent spending and saving decisions. All Americans should be permitted to use pretax dollars to establish their own medical savings accounts.

To preserve excellence in American medicine, we must preserve patients' freedom of choice—not turn it into the sham of picking Monolith A or Monolith B, both offering the same government-dictated benefits package.

If government forces us all into a bureaucratically managed system, we will still have something called "health care," delivered by persons called "health care providers." But such a system will have no place for ethical physicians, whose Oath forbids them to accept a situation of conflict of interest with their patients.

Government bureaucracy has never controlled costs. The promise of universal access to comprehensive service under a global budget and government rules is, in a word, bankrupt.

Government officials do not take an oath to do no harm. What a government system *can* accomplish is to destroy the art and science of medicine in these United States of America.

JANE M. ORIENT, M.D., Executive Director of the Association of American Physicians and Surgeons, Tucson, Arizona.

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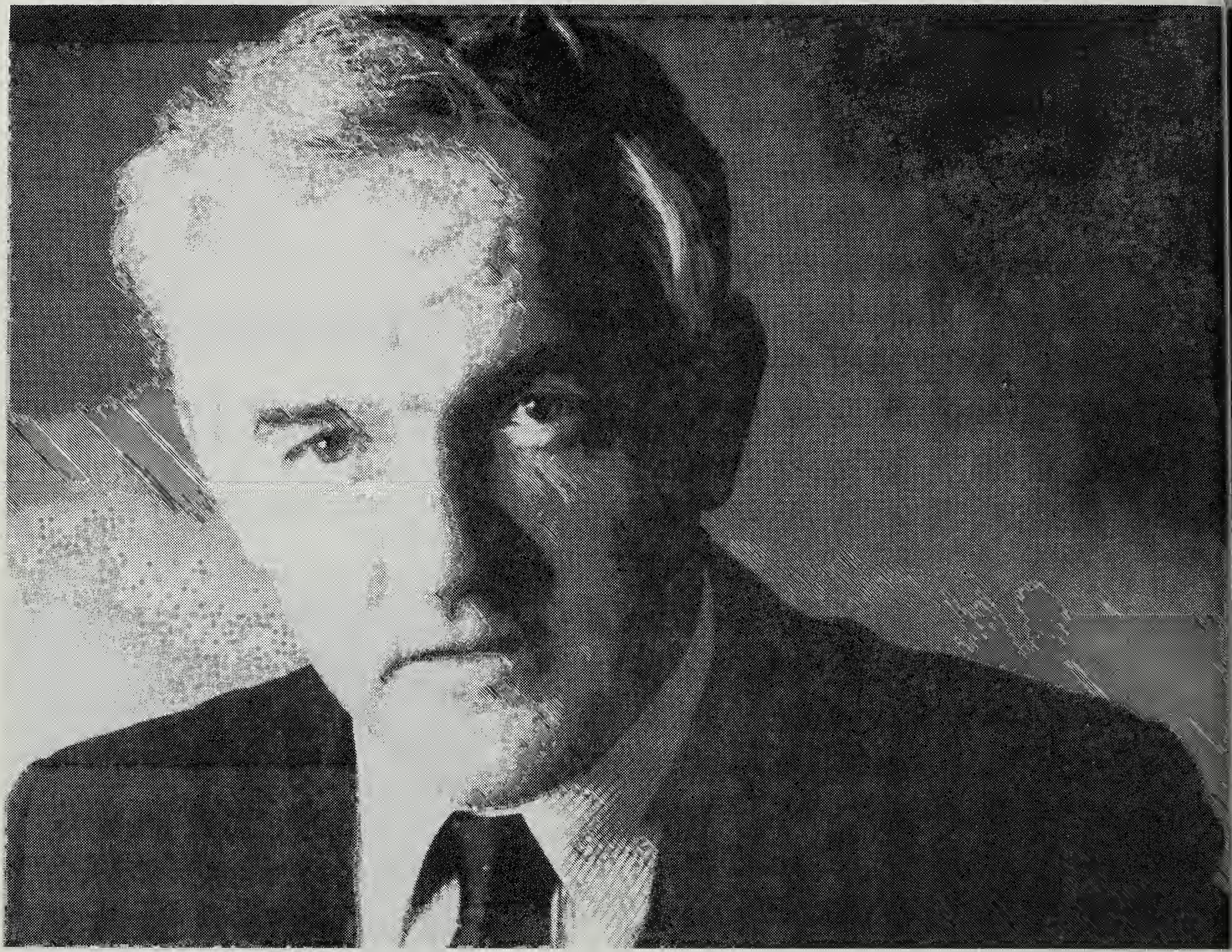
“Filling out insurance forms gives my patients a pain in the neck.”

—Dr. Patrick J. Carolan, Orthopedics, Bridgeport, CT



“Good medical care was once as easy as seeing your doctor. Complications set in. Forms to fill out. Deductibles. Hidden costs. Partial coverage. Non-medical intrusions into the patient-physician relationship.

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DRUG INFORMATION UPDATE: HARTFORD HOSPITAL

Toxicity of Sodium Nitroprusside

MARGARET M. DWYER, R.PH. AND CYNTHIA L. MORRIS, PHARM.D.

Introduction

SODIUM nitroprusside (SNP), a rapid acting vasodilator, is used in hypertensive emergencies, afterload reduction, and induction of controlled surgical hypotension. SNP is a nonspecific (arterial and venous) vasodilator that has been in clinical practice for over 40 years.[1] Immediate liberation of cyanide (CN), the principle metabolite of SNP, during SNP infusion is responsible for significant complications which may be overlooked and may not be attributed to SNP in the critically ill patient. Cyanide is detoxified by thiosulfate, a compound which may be deficient in certain patients, and the enzyme rhodanase. In the United States alone, estimates of CN toxicity and mortality associated with SNP exceed 3,000 and 1,000 cases per year, respectively.[2,3]

Pharmacology of Sodium Nitroprusside

A single molecule of SNP, $\mathrm{Na_2\{Fe(CN)_5NO\}\ H_20}$, consists of a ferric center, five cyanide ions, and a nitric oxide group (NO).[4] The mechanism of action of SNP is not known, but is attributed to the spontaneous degradation of SNP to NO. The clinical effect of SNP occurs immediately and reverses rapidly (a half-life of two to three minutes).[5]

Through interaction with sulphydryl groups present in vascular smooth muscle, erythrocytes, and deoxyhemoglobin, SNP immediately dissociates to NO.[3] In the blood, hemoglobin transports NO as nitrosylhemoglobin (HbNO) to the endothelium where it activates guanylate cyclase, elevates cGMP, and results in the reduction of calcium influx into the vasculature.[1,7] This relaxes systemic vessels and decreases systemic vascular resistance (afterload), pulmonary capillary wedge pressure (preload), and blood pressure.[1] However, in the presence of excess cyanide, decomposition and activation of SNP is inhibited.[6]

Mechanism of Cyanide Toxicity

Nonenzymatic decomposition of nitroprusside in the blood releases five cyanide ions; one binds to methemoglobin (metHgb), and four remain as free cyanide.[5] An unknown portion of cyanide may react with hydroxycobalamin to form the nontoxic, renally eliminated cyanocobalamin. Since cyanide has a high affinity to the ferric ion of metHgb, cyanomethemoglobin (CNmetHgb) is readily formed and renally eliminated as a nontoxic product.[8]

According to Vesey et al, 30% to 40% of free cyanide remains in the blood stream, and the remaining 60% to 70% is distributed in the tissues. Greater than 98.5% of the cyanide found in the blood stream is bound to erythrocytes, the remaining cyanide is "free" in the plasma. An equilibrium is established between blood and tissue cyanide which allows for quantitation of erythrocyte and tissue cyanide concentrations.[9]

In the tissues, cyanide reversibly binds to cytochrome oxidase's ferric (Fe^{+++}) ions, inhibiting aerobic cellular respiration.[5] The inability of cytochrome oxidase to extract oxygen from the blood into the cell results in cellular anoxia, metabolic and lactic acidosis, and arterialization of venous blood gases.[10]

Accumulation of cyanide is believed to be dose dependent.[11] Pasch demonstrated a significant correlation between SNP dose and the final concentration of cyanide.[5]

MARGARET M. DWYER, R.PH., Pharmacy Resident, Hartford Hospital, Department of Pharmacy Services. CYNTHIA L. MORRIS, PHARM.D., C.S.P.I., AACT, Clinical Specialist, Hartford Hospital; Assistant Clinical Professor, University of Connecticut, School of Pharmacy, Storrs.

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Risk Factors of Cyanide Toxicity

Malnourished, patients following coronary-artery bypass grafts (CABG),patients with renal insufficiency, and patients with hepatical insufficiency are at risk for cyanide toxicity.[11-13] Anticipated accumulation of cyanide under administration of nitroprusside without thiosulfate has been predicted from the maximum detoxification rate and the volume of distribution (0.25 L/kg). Schulz's nomogram revealed accumulation of cyanide with short-term, aggressive administration (Fig. 1). Prolonged use of SNP, in a dose related fashion, also increased the risk of cyanogenesis. SNP rates less than 2.5 mcg/kg/min did not cause cyanide toxicity. However, cyanide accumulation was rapid in SNP rates exceeding 5 mcg/kg/min.[14]

In CABG patients who received SNP with thiosulfate, at normal body temperature and during hypothermia, cyanide erythrocyte concentrations rose slowly and significantly. In similiar patients who received only SNP, serum cyanide levels were higher. Hypothermia decreases hepatic blood flow and binding proteins, usually responsible for thiosulfate transport. Therefore, hypothermia reduces the body's ability to transport thiosulfate to detoxify cyanide. Measured urine and plasma thiosulfate levels pre- and postoperatively revealed reduced plasma thiosulfate levels and increased excretion of thiosulfate. Sodium thiosulfate has been advocated in CABG patients and patients receiving SNP at rates greater than 2 mcg/kg/min.[15-17]

Monitoring Criteria for Cyanide Toxicity

Onset of toxicity has varied from 35 minutes to 14 days from the start of the infusion.[11-21] Early signs of cyanide toxicity may be manifest as tachyphylaxis to SNP's hypotensive effect, increased blood lactate levels, ST wave changes, elevated venous PO_2, mental status changes, confusion, headaches, and metabolic acidosis.[1,3,11-13]

Serum cyanide levels may take days to analyze, and therefore it is unreasonable to depend upon them as a diagnostic fulcrum for treatment of cyanogenesis.

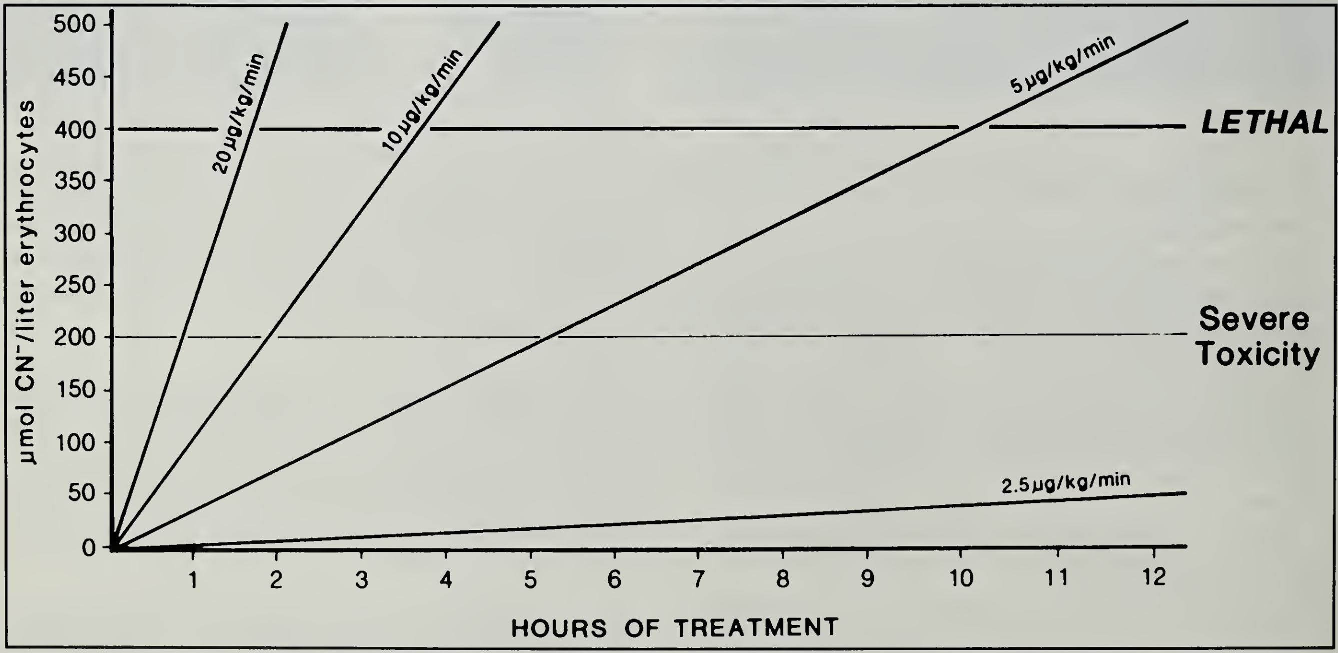
The patient's clinical condition corresponding to red blood cell concentrations of cyanide is shown in Table 1.[14]

Use of Sodium Thiosulfate to Prevent Cyanide Toxicity

Sodium thiosulfate is the rate limiting substrate in detoxifying cyanide. It provides a continuous endogenous source of sulfur for the enzyme rhodanase.[14,19] This process converts serum cyanide to thiocyanate and allows reequilibration of cyanide from tissues to serum. The end-product, thiocyanate, is then eliminated through the kidneys. Sodium thiosulfate's elimination half-life is approximately 15 minutes.[20] Apart from the cathartic action of oral thiosulfate, the intravenous form indicated here is relatively benign in patients with normal renal function.

The Federal Drug Administration recently recommended the coadministration of sodium thiosulfate with SNP to enhance the metabolism of CN and support its

Figure 1.—Accumulation of Cyanide in Patients with Normal Renal Function



(Schulz V, et al. Cyanide toxicity of sodium nitroprusside in therapeutic use with and without sodium thiosulfate. *Klin Wochenschr* 1982;60:1393-1400).

Table 1.—Clinical Symptoms
Related to Cyanide Levels

Clinical Condition	Erythrocyte CN conc (umol/L)
Normal	0.5
Detectable signs (mental status changes)	40
Severe toxicity (arrhythmias, metabolic acidosis)	200-250
Lethal (coma, death)	400-500

clearance (as thiocyanate) from the body.[20] The recommended dose is 1g of sodium thiosulfate per 100 mg of sodium nitroprusside, as a continuous infusion.[11,12,14] Mixed together, solutions are stable for 24 hours when protected from light.[5]

In severe cases, treatment of toxicity requires the discontinuance of the SNP infusion and the use of appropriate antidotal therapy (Lilly Cyanide Antidote Kit—amyl nitrate, sodium nitrite, sodium thiosulfate). Hydroxycobalamin has successfully been used in Europe as an antidote to cyanide poisoning, but is unavailable in appropriate concentrations at this time.

Toxicity of Thiocyanate

Although cyanide is approximately 100 times more toxic than thiocyanate, the latter may also accumulate to toxic levels when SNP and thiosulfate are infused together for periods exceeding 48 to 72 hours.[5,12,20] Thiocyanate has an elimination half-life of 2.5 days in patients with normal renal function. Persons in renal failure display a prolonged elimination half-life of up to nine days.[18] Thiosulfate infusions should be stopped if blood thiocyanate levels exceed 10 mg/dL.[12,22] In emergency cases thiocyanate is removed by hemodialysis.[13,23] Toxicity has occurred without changes in serum creatinine, electrolytes, or arterial blood gases.[24]

The mechanism of thiocyanate toxicity is unknown, but toxic manifestations closely resemble cyanide's CNS toxicity. Symptoms of thiocyanate toxicity may present as muscular weakness, nausea, vomiting, disorientation, confusion, hallucinations, aphasia, convulsions, twitching, coma, and death.[12,23]

Conclusion

In summary, SNP is a potent, rapid-acting vasodilator which releases five cyanide ions immediately after infusion. Spontaneous detoxification of cyanide is dependent upon the enzyme rhodanase and an adequate supply of thiosulfate. The supply of thiosulfate is the rate limiting step in detoxification. Risk factors for cyanide toxicity include conditions which limit available thiosulfate, (ie, malnutrition, cardiopulmonary bypass, and moderate to high doses of SNP), renal insufficiency, and an inability to metabolize CN (liver disease).

SNP should be used with caution and in combination with sodium thiosulfate (1g Na thiosulfate per 100mg of SNP) to enhance metabolism of CN in patients at risk for developing cyanide toxicity.

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Editorial

The Brody Plan

ROBERT M. LEHMAN, M.D.

THE American medical system is under attack and dramatic changes are being proposed. While most physicians agree that change is necessary, many are becoming unsettled for they believe they are being excluded from the process.

But this is easily dismissed by Joseph A Califano, Jr., former Secretary of Health, Education and Welfare, as "... medicine is too important and expensive to leave to the doctors, just as war is too important to leave to the generals."

Pleas by health professionals that our current fiscal crisis and many medical practice patterns are a result of well-intended but ill-conceived governmental programs, an excess of attorneys working within an antiquated tort system, and over-legislated, inconsistent regulations resulting in a morass of paperwork receive little more than a polite nod.

Physicians, hospitals, and drug companies continue to be the politicians' scapegoat. We can be sure that whatever solutions emerge from Congress will hold the promise of universal coverage, simplification of process, and reasonable costs. Elimination of red tape and simplification of procedure will be insured, if history has taught us anything, by a burgeoning bureaucracy on both federal and state levels.

Recently I came upon a suggestion to President Clinton by Dr. William Brody, Chairman of the Department of Radiology at Johns Hopkins University. As it was unusual I thought I would pass along the idea for further consideration.

First, some background as to why the idea caught my fancy.

It was brought to my attention by H. Ross Perot during the recent presidential campaign that the size of the U.S. Department of Agriculture had increased dramatically this century while at the same time the number of farmers has plummeted. As we all know, this increase was in large part due to implementation of subsidies paid to farmers not to plant crops, as we found that our production far outstripped the demand. While we are all aware that the government found a final solution to decreasing the farmer population, they are still left with a high surplus of Agricultural Department employees whom they cannot release into the labor force during a time of high unemployment, thus aggravating unemployment statistics.

It also should be noted that current gospel declares that there is an excess of medical specialists, a shortage of primary care physicians, and that specialists account for a large proportion of physician charges.

Brody's suggestion is simple—pay physicians not to practice. We could simply transfer existing excess USDA employees to the Health Care Financing Administration and put them to work issuing checks to the medical specialists. The government would simply pay, depending on specialty, 20 percent of the physicians' salary in exchange for their performing 20 percent less procedures. This makes economic sense because it has been suggested by the Presidential Commission that physicians practice the concept of "targeted income." That is, they set a goal and then charge whatever is necessary to achieve it. If prices are capped, as with DRGs, then we are told they simply increase the number of procedures, which increases medical costs exponentially rather than arithmetically, as the number of ancillary procedures generated increases.

This would serve as a handy substitute for Clinton's rejected economic stimulus package. An added benefit of the subsidiary would be and additional 20 percent additional physician free time generated, time which the

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ROBERT LEHMAN, M.D., director of Nuclear Medicine at St. Mary's Hospital, Woodbridge.

Article reprinted courtesy of *St. Mary's Hospital Physician News*, a montlhy publication for the medical staff and physicians associated with the hospital.

physicians could use to spend golfing, vacationing, and otherwise stimulating the economy.

The second part of The Brody Plan addresses the purported overabundance of doctors by having the government pay each American medical school an amount equal to 20 percent of one year's tuition in exchange for leaving 20 percent of the positions unfilled.

Half the remaining students would be required to practice primary care. With a reduction of specialists, the cycle would be broken and the subsidies to specialists and "phantom medical students" would eventually end.

Addendum: I recently read in the *New York Times* article that the Clinton administration has now scorned the term "managed competition," referring to it as an academic theory. They said that some may still prefer to call it "managed competition" but the administration prefers to call it an "American System that Works for Every State."

Could this be The Brody Plan?

REFERENCE

Brody, WR: Academic outlook: A modest proposal for cutting costs *Diagnostic Imaging* 1993; 15:3.

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organiza-tions are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **INFORMATION FOR AUTHORS**. This material may be obtained from the Journal office (also printed in *Connecticut Medicine*). Adherence to the instructions will prevent delays both in acceptance and in publication. A copy of the manuscript on floppy disk (3-1/2" or 5-1/4") should be submitted along with the hardcopy.

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References:
1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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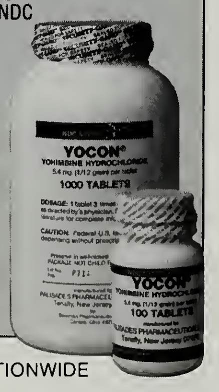

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50 Years Ago

From *The Connecticut State Medical Journal*

June 1943

EDITORIALS

Psychiatry in the Post War Period

In this day of global war with its associated spirit of hate being vigorously inculcated into the youth of all nations, our own not excepted, Dr. Burlingame's "A Psychiatrist Looks at War and Peace," published elsewhere in this issue, sounds an encouraging note. The ideas so ably expressed in this paper formed part of the annual report of the Physician-in-chief at The Institute of Living. Dr. Burlingame points out the transition in the emotional urges of our people, necessitated by this struggle when we have been "called upon to grow overnight from the adolescence of provincialism to the maturity of enlightened interemotionalism." We must recognize the spiritual factor in the American Way of Life and he willing to allocate to their place of secondary importance the many gadgets and comforts of our modern civilization. Should we fail in this, we shall suffer in our post war period of reconstruction when the emotional urges cultivated for war must he redirected into peace time pursuits.

The theme of Dr. Burlingame's paper is a closer alliance between education and the mental hospital, thus bringing this institution and the community into a stronger and sturdier relationship. The world faces a gigantic task in planning for post war reconstruction. Following the last World War there were far too many maladjusted individ–uals struggling for existence, with ideals lost and lacking in a realization of how to carry on. The development of psychiatry in the past quarter century, together with the recent metamorphosis of our educational system, offers this branch of medicine unexplored opportunities in practical guidance. Psychiatry will continue to take an increasingly prominent place in the immense task of reindoctrination.

Dr. Burlingame has completed thirty-five years as director of the long established institution, now fittingly termed The Institute of Living. During the past year it has received the largest number of admissions in its history an unprecedented number of individuals. With such intelligent leadership the problem of post war reconstruction will be the easier.

Colonel Bayne-Jones Receives Honorary Degree

Colonel Stanhope Bayne-Jones, Professor of Bacteriology at Yale University, on leave, at present Chief of the Civilian Board of Epidemics Section and Assistant Director of the Division of Preventive Medicine in The Office of the Surgeon General, was awarded the honorary degree of Doctor of Science at The University of Rochester on May 2, 1943. Dr. George Packer Berry, in presenting Dr. Bayne-Jones, said:

"With imagination and skill he has applied physicochemical technics to exploring the life processes of micro-organisms and has made his great knowledge of bacteriology widely available through scientific papers, textbooks and popular articles. His patience, kindliness and humor have won him lasting friends among both colleagues and students....

"His ability in dealing with people has brought Dr. Bayne-Jones many administrative duties beyond academic walls, in scientific societies and medical foundations, including the directorship of the Jane Coffin Childs Memorial Fund for Medical Research.

"His country has ever commanded his devoted service—in the first World War as a Major with the British and American armies in France, Italy, and Germany winning the Military Cross, the *Croix de Guerre* and several citations for gallantry at the front; at present in a post of great responsibility as Chief of the Civilian Board of Epidemics Section and Assistant Director of the Division of Preventive Medicine in The Office of The Surgeon General."

Dr. Bayne-Jones has long had an interest in the affairs of medicine in Connecticut and during his tenure as Dean of the Yale School of Medicine served as Chairman of the Committee on the Connecticut Clinical Congress. His many friends among the members of The Connecticut State Medical Society will congratulate him on this notable addition to his many honors.

—Editorials from the *Connecticut State Medical Journal*, July 1943.

Around the State

Platelet Transfusion: A Consensus Development Conference.

September 27
Rocky Hill Marriott

This one-day conference is designed for clinicians and transfusion medicine specialists to answer important questions in the clinical use of platelets. This regional conference will be organized in a manner similar to NIH consensus development conferences. Nationally recognized speakers will offer answers to seven current questions in the proper use of platelet transfusions. Following the conference, the outcome will be summarized in a consensus document that will be distributed to participants and to regional hospitals, blood centers and physicians. For additional information, please contact Dr. Ritchard Cable, American Red Cross Blood Services, 209 Farmington Avenue, Farmington, CT 06032.

Connecticut Rheumatology Society to Host Meeting

August 12
New Haven Lawn Club

”The Connecticut Rheumatology Society,“ a new organization which includes the Arthritis Foundation, Connecticut Chapter, The Department of Rheumatology at Yale University, and the Division of Rheumatic Diseases at the University of Connecticut Health Center, will hold an educational event and dinner meeting on August 12, at the New Haven Lawn Club. Robert Lahita, M.D., head of the Section of Rheumatology at Roosevelt and St. Luke's Hospital in New York, will speak on lupus. Dr. Lahita is an acknowledged expert on the subject of hormones in lupus.

For further information and/or registration for this event please contact the Arthritis Foundation, Connecticut Chapter, 35 Cold Spring Road, Suite 411, Rocky Hill, CT 06067 or call 1-800-541-8350 or 563-1177.

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- Treatment of Asthma(Steroid Use)
- Chronic Fatigue Syndrome
- Hip Problems
- Foster Care in the 1990's

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Please send them to:
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THE PRESIDENT'S PAGE

1993 AMA Principles of Medical Ethics

Last month I referred to CSMS and our county medical associations as similar to the medieval guilds that sought to assure high quality for their clients while tending to the needs of their members. The 1993 AMA principles of medical ethics serve as an excellent guideline for achieving our goals of professional integrity and help define our guild's behavioral code.

I. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.

Our scientific know-how must be combined with our "bedside" manner as we treat our patients in the style we prefer for ourselves in similar circumstances. We should communicate with them in a considerate nonjudgmental manner. We should make the extra effort to get the results of tests to them as promptly as possible. We should ascertain the family circumstances affecting them as they deal with their illness. Above all, we must remember they are the patients, we are the healers. Empathy is acceptable, role-reversal is not.

II. A physician shall deal honestly with patients and colleagues and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.

An obligation if we are to preserve our collective and individual integrity as professionals. If we don't do this well, others less competent to do so will move into the gap we leave. We must not let a bad apple spoil the barrel. We must not let a professional guild which polices itself become a group of self-serving members who take no responsibility for the behavior of their colleagues.

III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.

These are societal mandates for all citizens; respect for the law but courage and energy to seek change if it seems necessary and desirable.

IV. A physician shall respect the rights of patients, of colleagues, and of other health professionals and shall safeguard patient confidences within the constraints of the law.

This is essential in any professional interaction with a client. All such relationships are based on trust. Personal integrity is included in the definition of the true professional.

V. A physician shall continue to study, apply, and advance scientific knowledge, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.

The efforts we make at lifelong acquisition of knowledge, peer review, formal and informal consultation, and preparation make us more useful to our patients.

VI. A physician shall, in the provision of appropriate patient care except in emergencies, be free to chose whom to serve, with whom to associate, and the environment in which to provide medical services.

Nothing in this ethical code suggests that our choice of whom to serve should be based on race, religion, ethnicity, or the nature of the patients illness so long as we are competent to treat that illness. But in a free society free choice must be preserved for us as it must be for our patients.

VII. A physician shall recognize a responsibility to participate in activities contributing to an improved community.

Professionals have an obligation to work at community improvement. If we did not, and other professionals did not, the balance would not exist that makes for a constantly improving society.

Others among you may subscribe to one or more additional ethical principles. Let me know your suggestions in this respect. Meanwhile the AMA list is an excellent starting point, a blueprint for our guild to follow.

Howard J. Wetstone, M.D.
President

Information for Authors

Manuscripts

Manuscripts should be submitted to **Robert U. Massey, M.D., Editor, CONNECTICUT MEDICINE,** 160 St. Ronan St., New Haven, CT 06511, **in original and one duplicate copy.** The author should retain another copy for his records. A covering letter should identify the person (with the address and telephone number) responsible for negotiations concerning the manuscript; the letter should make it clear that the final manuscript has been seen and approved by the authors.

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Manuscript Preparation

Copy must be typewritten double-spaced on (8½ x 11-inch) heavyduty, white, bond paper. This requirement applies to all text elements: references, legends, footnotes, and others. Pages should be numbered. Authors should generally follow *JAMA* style or consult *Manual for Authors & Editors,* Eighth Edition, 1989, compiled for the AMA and published by Williams & Wilkins.

Titles and Author's Names

The first page of the manuscript should include (A) title of paper; (titles should be short, specific, clear, an amenable to indexing; (B) name of author(s), including first name(s) and academic degree(s); (C) List hospital positions for each author and any institutional or other credits. If an author's present affiliation is different from the affiliation under which the work was done, both should be given. Include academic appointments when applicable.

Units of Measurement

Express all measurements in Système International (SI) units, but include older conventional units in parentheses if desired. Use Celsius for temperature.

Abstracts

The second page should contain an abstract of not more than 150 words. This abstract should be factual, not descriptive, and should present the reason for the study, the main findings (give specific data if possible), and the principal conclusion. Do not include a summary.

References

The following minimum data should be typed double-spaced: names of all authors, complete title of the article cited, name of journal abbreviated according to *Index Medicus,* year of publication, volume number, and first and last page numbers. All references must be cited in the text. They should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively. Numbered references to personal communications, unpublished data and "in preparation" are unacceptable. If absolutely essential, such material may be incorporated in the appropriate place in the text or as a footnote. Sample references are as follows:

1. Jones J: Necrotizing *Candida* esophagitis. *JAMA* 1980;244:2190-1.
2. Kremer H, Kellner E, Schierl W, et al: Ultrasonic diagnosis in infiltrative gastrointestinal diseases. *Dtsch Med Wochenschr* 1978;103:965-6. Abstracted, *JAMA* 1978;240:2784.
3. Influenza vaccine—recommendations of the Public Health Service Advisory Committee on Immunization Practices. *MMWR* 1979;28:231-8.
4. Fischer DH: *Growing Old in America.* New York, Oxford University Press, 1977, pp 210-6.

Tables

Data presented in tables should be self-explanatory and should supplement, not duplicate, the text or figures. Excessive tabular data are discouraged. Each table should be typed double-spaced, including all headings, on separate sheets of 8½ x 11-inch paper. Oversize papers should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively with respect to citation in the text. Each table must have a title.

Illustrations

Figures should be professionally drawn and photographed, if possible. Glossy, clear black and white photographs should be submitted.

Line drawings, graphs, and charts should be done in India ink on high-grade white drawing paper. Lines should be examined for evenness, breaks, and proper alignment. Lettering and symbols should be clear and of even density throughout. Symbols, lettering, and numbering should be of such proportioned size that when the figure is reduced to *Journal* column width (8 cm) each item will be distinctly recognizable.

Do not send original artwork or black and white negatives.

Each figure should have a label pasted on its back indicating the figure's number, the names of the authors, and the top of the figure. Do not mount the figure on cardboard. Do not write on the backs of figures, nor expose them to paper clips.

If photographs of patients are used, either the subjects should not be identifiable, or their pictures must be accompanied by written permission to use the figure.

Legends for illustrations should be typewritten (double spaced) on a separate sheet with numbers corresponding to the figures.

Drug Names

Generic names should be used. If an author so desires, brand names may be inserted parenthetically.

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Review and Action

All manuscripts are subject to review by referees in appropriate fields of medicine. Authors are usually notified within three to six weeks as to the acceptability of a manuscript, but sometimes longer delays are unavoidable.

The Millis Report and Graduate Education Reform

ROBERT U. MASSEY, M.D.

> At present, medical schools provide excellent models of the scientist-research scholar and the hospital-based specialist, but rarely if ever do they provide models of comprehensive health care or of physicians who are successful and highly regarded for providing that kind of medical service. Worse, some faculty members tend to denigrate the role of such physicians.
>
> There are exceptions, but in the typical medical school hospital, the student does not see a normal range of patients,...[1]

WHEN the Millis Report was anticipated in early 1966, almost three decades ago, there was talk that it would be a modern-day Flexner Report, aimed at graduate medical education rather than undergraduate. Rarely does the work of a committee carry the firepower of a single-authored assault; read even a few pages of Part II of Abraham Flexner's 1910 *Medical Education in the United States and Canada* and you will understand why it was a best seller.

Nevertheless *The Graduate Education of Physicians* had its effect, mostly on the new medical schools that were starting up at about that time, and mostly on the young professors who would help to design them. Those pioneer faculty members are now retiring, and, with a few notable exceptions, the institutions they helped to form have, not unexpectedly, reverted to the mean. An emeritus professor commented to me last month, "We drew our faculty from all over the country and they canceled each other out!" Another called to tell me that he was going half way across the country to attend the 25th commencement of the school he helped establish. "I'm going to remind them of what William Osler said about the dangers of specializing and the greater value to society of the generalist. We started off bravely enough but now the place is like any other."

Osler had high praise for the general practitioner, saw the internist not as a specialist but as a consultant; specialists were in such fields as ophthalmology, gynecology, and urology ("examines eyes, palpates ovaries, or tunnels urethrae"[2]). But he had little patience with the "sucklings in our ranks" who seek "the most likely branch in which to succeed."

> No more dangerous members of our profession exist than those who have been born into it, so to speak, as specialists. Without any broad foundation in physiology or pathology, and ignorant of the great processes of disease, no amount of technical skill can hide from the keen eyes of colleagues defects which too often require the arts of the charlatan to screen from the public.[2]

The Millis Report with its emphasis on comprehensive medicine "—not merely in a formal sense but sincerely—" has troubled the conscience of medical schools for over 25 years, yet during this time primary care as a career choice for graduates has continued to decline. When they apply to medical school more than half of these young men and women declare their intentions to be generalists, partly because they believe we want to hear it, but mostly because they are idealistic and eager to serve.

> There is a kind of arrogance in specialized medicine that runs deeper than such attitudes do in other fields....In contrast, the words used in medical discussions often seem to assign to the family practitioner the inferior status of routing clerk....[1]

Talk of reform in graduate medical education is once again being heard, especially in departments of medicine. It will remain mostly talk, sometimes angry, until everyone is bored with it or until irresistible pressure is brought to bear from the outside: reduced funding for housestaff programs so that PGY-I positions will equal the size of the graduating class plus 10%; primary care positions in all years should account for at least 50% of all residency positions; and incomes of general internists, general pediatricians, and family practitioners no longer compare so unfavorably with those of the consultant-specialists.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

REFERENCES

1. Citizens Commission on Graduate Medical Education (Millis JS, chairman) : The *Graduate Education of Physicians.* Chicago: AMA; Aug 1966.
2. Osler W: Remarks on specialism. *Boston Med Surg J* 1892; 126: 457-9.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that the are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

COMPENDIUM ON GERIATRICS

To the Editor: I joined CSMS in 1954 and retired in 1984. As a life member, I have since received your journal monthly. By 1993, what with the spate of nonclinical articles, the fulminations of Dr. Vernon and the ever-increasing encroachment on the doctor-patient relationship portrayed therein, I was just about to ask that it be discontinued.

Now, suddenly, comes the May '93 issue, a *special* issue on geriatrics, by Connecticut physician-teachers, a most wonderful compendium for those of us now "geriatric."

Not routinely a Royko fan, I was delighted with his analysis of political polling and doctors' earnings.

I owe you and CSMS many thank for continuing to send *Connecticut Medicine*, but also my special thanks for this special issue!

Ernest A. Bolt, M.D.

Portland, Maine

PRIMITIVE STATE OF MEDICAL SCIENCE

To the Editor: As a senior citizen and a recent retiree, I found several of the articles in the May issue of *Connecticut Medicine* that related directly to many of my personal medical problems. However, the article that really stimulated my heart and my mind was "What Matters Most" by Dr. Peter Deckers. It was most gratifying to know that men such as Dr. Deckers are involved in preparing the younger generation for entrance into the medical profession. The unfortunate coincidence of having Mike Royko's article appear in the same issue reinforces my high regard for the views of Dr. Deckers. I believe articles like Royko's demean rather than enhance our medical cause.

I was in practice long before the imposition of changes by governmental and other agencies in the ways of conducting medical practice. In fact, my entrance into medicine was even years before the host of advances in treatment were given to the medical profession. Yes, I was a physician in the period that Dr. Deckers describes as the period of "the primitive state of medical science."

Yet, in spite of all these changes, some good and some bad, it is most comforting to know that men like Dr. Deckers continue to believe that moral responsibility still remains, as it has for centuries, the priceless ingredient in the practice of medicine.

Theodore Rosen, M.D.

Manchester

THE FIVE FIVE'S

To the Editor: I read with interest the article by James O. Judge in the May issue of *Connecticut Medicine* on "Exercise Programs for Older Persons: Writing an Exercise Prescription." I agree with many of the things that Dr. Judge suggests and documents. An excellent exercise program which I drafted years ago has also been adopted by the Saint Francis Hospital Cardiac Rehabilitation Program. I still use it, and it works beautifully. It is called "The 5 5's." Basically, the program starts off with walking 2-1/2 minutes out and 2-1/2 minutes back (is 5 minutes) 5 days a week. Five minutes is added every Monday until 50 minutes per day is achieved, 50 weeks a year. Hence, "5 5's." A valuable addition is the use of 1 lb large size Heavy Hands (permits the use of gloves during the winter). These weights are used like the ropes of a cross country ski machine while walking and are to be used only in a natural flow, not necessarily keeping cadence with the feet. The are not just "carried."

Finally, in the elderly far more important than the aerobic exercise is weight lifting. I have found the use of 1 lb cans (of food) to be excellent to get started with, later graduating to 3, 5, and 10 lb Key (brand) 1 hand free weights available locally at various gyms and athletic stores.

H. Robert Silverstein, M.D.

Hartford

MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

- "Patients could be called the most greedy element in the health care equation because of their high expectations of physicians." Remarks of former Surgeon General C. Everett Koop, M.D. in the *Boston Globe* while challenging what is often said to be an underlying element of the health care crisis—greed on the part of doctors and hospitals.
- A HCFA study, "Trends in Medicare Payments in the Last Year of Life," showed the percentage of Medicare spending during that last year of life to be 28.2% in 1976, 30.8% in 1980, 26.9% in 1985 and 27.2% in 1988.... Medicare per-capita payments during the last year of life "generally decreased as age of death increased," averaging $15,436 in 1988 for beneficiaries aged 65-69, and $8,888 for those 90 and over.... Researchers suggested that such figures could reflect less aggressive treatment of the very old.
- At the outset of Medicare, the U.S. House Ways and Means Committee estimated that the program would cost about $12 billion per year by 1990, even allowing for inflation....In fact, Medicare costs rose from $3 billion in 1966 to $129 billion in 1992.... The cost of Medicaid will reach $120 billion this year, up from $52 billion in 1988, despite price controls on physicians and hospitals.
- Americans aged 85 and over spend twice as much per capita on hospital care as the young elderly (ages 65 to 69); on nursing home care they spend more than 20 times as much.
- The world's over-65 population is increasing by 200,000 a week and soon will grow by more than one million a month.... A survey found that 342 million people, about 6.2% of the world's total population, were over 65 in 1992.... The U.S., with an elderly population of 12.6% (13.6% in CT), ranked 20th among 50 nations surveyed regarding the percentage of its over-65 population in 1992.
- The *Congressional Quarterly Researcher* lists the top problems in public schools as identified by teachers in 1940: talking out of turn, chewing gum, making noise, running in the halls, cutting in line, dress code infractions, littering.... How things change! In 1990 the top problems were: drug abuse, alcohol abuse, pregnancy, suicide, rape, robbery, assault.
- "I am not as concerned about physicians' incomes as some are. The AMA indicated that radiologists and anesthesiologists make average incomes of $230,000 and $221,000, respectively. That doesn't seem unreasonable. What does alarm and offend me are compensation figures for insurance executives. According to Families U.S.A., the top officers of 10 insurance companies ranged from $648,000 to $2.4 million in 1991. And these are the people who plead that they can't afford to insure for prior conditions?" Lee Cullum, Columnist in the *Dallas Morning News.*
- According to *Business Week*, only 33% of Americans now get strenuous exercise—down four points since 1991.... Pork consumption was up 8%, to 53.1 pounds per person, in 1992....And just 44% of Americans said they tried to avoid cholesterol last year, from 50% in 1991....Only 51% said they avoid fat, down from 57%.
- Heart disease accounts for about one in three deaths, a total of nearly 600,000 deaths a year in the U.S.
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- The percentage of hospital services paid directly by consumers declined from 20% in 1960 to approximately 5% in 1990.... For physician services, the reduction has been from 60% in 1960 to less than 20% in 1990; for drugs, from 99% to about 73% in 1990; for nursing homes from 80% in 1960 to 45% in 1990.
- *Only In America:* Terry Anderson, who spent six and one half years as a hostage in Lebanon, is writing about that experience and is attempting to obtain information on nine men who held him captive. When he filed a Freedom of Information Act request, the Justice Department refused it, claiming that it would violate the kidnappers' right to privacy. The department told Anderson that he would need either notarized privacy waivers from each captor, or proof of their deaths.

TIMOTHY B. NORBECK, Executive Director, Donnecticut State Medical Society.

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Prompt IV Anticoagulation of Cerebral Embolus Based on Clinical Information Alone: A Case Report

ARTHUR KOFFLER, M.D.

PROMPT treatment of a patient with hemiplegia and aphasia by I.V. sodium heparin. This case was diagnosed by clinical means alone as a case of cerebral embolism of cardiac origin. The heart, nonrheumatic, was in atrial fibrillation. The treatment resulted in complete restoration of all functions. The hemiplegia and aphasia cleared completely. This 96-year-old ambidextrous female has made a complete recovery and is now living in a senior residence where she functions normally.

On 11 July 1992, the patient, who had been functioning well, suffered a fall in her home and was unable to rise. She remained there for 36 hours and was fully conscious when discovered by her housekeeper. An ambulance took her to the hospital where she was found to be suffering from dehydration, fever, and atrial fibrillation, verified by ECG. The lung fields were clear. The abdomen was normal. Pelvic and rectal examinations were deferred. Neurological examination revealed normal sensorium, sensory findings, and motor function. Superficial and deep reflexes were normal throughout. Past history included cholecystectomy and appendectomy in 1935; hysterectomy for carcinoma of the fundus of the uterus in 1976; rheumatoid arthritis since 1960; and arteriosclerotic heart disease since 1970. Further past history included spontaneous rectal bleeding in 1991. Diverticuli were seen on colonoscopy at that time and there had been no further rectal bleeding.

At time of admission to the hospital the patient was weak and could not stand or walk because of inanition and dehydration. Following rehydration and food she could stand and walk. She made a rapid recovery and on the third hospital day she was discharged to her home. During the discharge process, she slumped forward in the wheelchair as she attempted to enter the car. It was soon apparent that she had developed a left hemiplegia, a marked right facial palsy, and severe slurring of speech. Her hospital discharge was cancelled and she was returned to her room.

The patient was examined shortly after readmission confirming the above. She was known to be for over 50 years a low normotensive. Therefore, the possibility of cerebral hemorrhage was remote. Because of the atrial fibrillation, it was probable that she had developed an embolus arising from an intracardiac thrombus. The decision was to institute intravenous sodium heparin therapy as soon as possible.

The dosage of IV heparin to a nongeriatric patient should be 30,000 units per day, but because of her advanced age, a daily drip dose of the drug at 20,000 units was decided upon. Also, rather than giving an initial bolus, it was elected to administer the drug for the first two hours at a double rate of 40,000 units per day. Within 24 hours the patient had recovered from all neurological (motor and sensory) deficits. It was noted, however, that during the immediate days following the readmission she was unable to recognize a few individuals who were very well known to her. This deficiency disappeared within a week.

On the night of the development of the hemiplegia, urinary retention was observed and was treated by the insertion of a Foley. During the ensuing days, a urinary tract infection developed that was eliminated by Unasyn® IV, followed by oral Augmentin®. The patient then had difficulty resuming bladder control and only after an interval of several weeks was this attained. During this time she received rehabilitation therapy for standing, walking, and bladder control.

ARTHUR KOFFLER, M.D., Senior Attending, Emeritus, Department of Family Practice, Stamford Hospital, Stamford; Senior Attending, Emeritus, Department of Family Practice, St. Joseph Medical Center, Stamford.

On 23 July 1992, seven days after the start of anticoagulation treatment, bloody stools were observed. She had had no rectal bleeding since the colonoscopy showed diverticuli in 1991. During the present admission an isotope bleeding scan showed "localized area of radionuclide in the right lower quadrant." After discontinuing warfarin and giving 10 mg of Synkayvite® I.M. the patient's rectal bleeding stopped completely. A barium enema showed only diverticuli. She was then placed on aspirin[3] 80 mg daily.

The patient remained hospitalized for one month following the stroke. She was discharged to her home on 16 August and then transferred to a senior residence in California. Now, nine months later, she remains in control of herself, ambulatory and, therefore, fully recovered. She is now being maintained on Dyazide® one capsule daily and Lanoxin® 0.25 mg daily. Since the sodium heparin and warfarin were discontinued she has been maintained on aspirin 80 mg daily.

Blood pressure on admission was 120/62 and continued in this range until day of discharge. Documented pressures over the past 50 years have also been in the same range.

On 14 July 1992, prothrombin time was 12.5. ppt 25.0. Having this information available at the time of the stroke was time saving. On 15 July 1992, one day prior to the cancelled discharge during which time the hemiplegia occurred, a two-dimensional echocardiogram was performed. The summary-diagnosis was as follows: Two dimensional echoviews demonstrated severe concentric LVH with small left-ventricular cavity. There was severe calcification of the mitral annulus and myxomatous mitral valve leaflets. There was prolapse of the anterior mitral leaflet at end-systole. There was a trace of mitral regurgitation and the left atrial cavity was dilated. There was mild calcific aortic stenosis with a 16-20 mm transvalvular gradient and 1+ aortic insufficiency. Right heart structures were normal and 1+ tricuspid insufficiency was demonstrated.

It should be remembered that an intracardiac thrombus can form at anytime in a heart which is in atrial fibrillation. Anticoagulation therapy is critical to the maintenance and management of such a case.[1] According to Gurwitz et al, age is not a contraindication in instituting anticoagulation therapy.[1] According to the findings of the Cerebral Embolism Study Group, this patient's stroke allowed the use of IV sodium heparin, since it was a moderate stroke and the patient was not in profound shock. Patients with large strokes or are in profound shock should not be given IV sodium heparin because they are at risk of conversion to hemorrhagic cerebral infarct.[2]

A computerized tomography scan of the head without contrast was performed on 20 July 1992, four days after the occurrence of the hemiplegia and showed mild atrophy and ventricular dilatation. No intra- or extra- axial masses or infarcts or hemorrhages were seen.

This is a remarkable case and merits discussion. The intracardiac thrombus as the origin of emboli has been recognized by pathologists and clinicians for many years.[5] The alert clinician bears this knowledge uppermost in his mind and when confronted with such a problem reacts by instituting indicated therapy.

When confronted with the above situation, the writer was at a great advantage in that he could remember that a low normotensive state had always been present in this patient.

Instead of losing precious time by waiting for a computerized tomographic scan, which would rule out a cerebral hemorrhage, prior clinical information excluded such an occurrence. Since this was a geriatric case, the dose of intravenous sodium heparin was decreased. Instead of an initial bolus being administered, it was felt to be safer simply to double the rate of sodium heparin administration for two hours.

This "trickle-down" therapy worked well. The possibility that this "stroke" represented a transient ischemic attack was considered but only very transiently. One could not wait to prove it! The incidence of stroke in patients with TIAs is not precisely known. In general, if untreated, about one third of patients with TIAs will suffer a completed stroke, one third will continue to have TIAs without infarction, and one third will have a spontaneous remission.[4] There was but one choice—to proceed with anticoagulation.

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Ovarian Abscess as an Unusual Infectious Complication of Laser Vaporization of the Cervix: A Case Report

AUDREY GASSMAN, M.D., ANTHONY SANTOMAURO, M.D.,
AND ROBERT J. STILLER, M.D.

ABSTRACT—Laser vaporization of the cervix has been reported to have an extremely low incidence of infectious morbidity compared to other treatment modalities. This case report describes the development of an ovarian abscess following laser surgery of the cervix in a patient with no known risk factors for disease.

Introduction

LASER vaporization has become an acceptable modality for the treatment of cervical intraepithelial neoplasia in both inpatient and outpatient settings. Few cases of significant morbidity have ensued.[1] It has been suggested that there may be a relationship between pelvic inflammatory disease and complications of laser surgery.[2] This case report describes an ovarian abscess following laser vaporization of the cervix in a patient with no known risk factors for either sexually transmitted or infectious disease.

Case Report

A 44-year-old white married female, gravida three, para three, presented with a history of recurrent abnormal pap smears. In 1979, colposcopically directed biopsy revealed chronic cervicitis and she was treated with cryosurgery. In 1990, cryosurgery was again performed because of repeated atypia on pap smear and colposcopically-directed biopsy documentation of chronic cervicitis. Atypia persisted and repeat colposcopically-directed cervical biopsy revealed extensive koilocytosis, acute inflammation, and normal endocervical curettings. In reviewing her gynecological history, it was noted that the patient had no known history of pelvic inflammatory disease. Previous gynecologic surgery included a dilatation and curettage (D&C) in 1984 and 1985 and cryosurgery in 1979 and 1990 with uneventful postoperative courses. On 10 January 1991, laser vaporization of the cervix was performed under paracervical block anesthesia. A CO_2 laser at 20 watts power was colposcopically directed to vaporize the cervix to a depth of 5 to 7mm and a diameter of 3.5 cm. Triple sulfa cream was administered vaginally twice daily for seven days postoperatively.

On the fifth postoperative day, the patient developed acute lower abdominal pain and nausea. She was afebrile and a pelvic examination revealed marked cervico-uterine tenderness but no adnexal masses. Laboratory studies included a white blood cell count of 12,830/mm^3 with 76% neutrophils. The diagnosis of endometritis was made, and the patient was started on cephradine 500mg QID. Over the next six days, the patient's symptoms improved. She was seen on the 11th postoperative day with complaints of fever and discomfort swallowing. Examination revealed a temperature of 37.7° C, oral candidiasis, a maculopapular rash on her extremities, and a nontender abdomen. On pelvic examination, the uterus was nontender. However, a 6 cm slightly tender cul-de-sac mass was now palpated. Laboratory studies included WBC 26,420/mm,^{3} with a differential of 71% neutrophils, and 9% bands. Her sedimentation rate was 57mm/hour.

The patient was then admitted to the hospital 12 days postlaser surgery with the diagnosis of tubo-ovarian abscess. On admission, her temperature was 39.2°C orally, a sedimentation rate was 135 mm/hr. Pelvic ultrasound

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Reprint Requests to: Anthony Santomauro, M.D., Director, The Infertility Institute, 4675 Main Street, Bridgeport, CT 06606.

revealed a 10cm cul-de-sac mass with a normal right ovary. A barium enema and appendiceal ultrasound were normal. Blood cultures, cervical cultures for chlamydia and gonorrhea, urine cultures, and HIV antibody were all negative. Given that the mass was not felt to be accessible to colpotomy drainage, the patient was treated with clindamycin and gentamicin intravenously. During her entire hospital course she was asymptomatic. She was discharged on the eighth hospital day after being afebrile for 48 hours. Her pelvic examination on discharge showed a decrease in the size of the mass and absence of pelvic tenderness. Additional therapy included mezlocillin 5 g q8H intravenous therapy at home for an additional seven days. She remained relatively asymptomatic; however, she continued to have a low grade fever, a mild leukocytosis (12,900 to 13,300/mm^3), an elevated platelet count of 656,000/mm^3, and an elevated sedimentation rate (130 to 140mm/hr). A course of ciprofloxacin 750mg BID and metronidazole HCL 500mg q6H was suggested by infectious disease consult, and was instituted on days 34-41 postlaser procedure. Three weeks after this therapy, she began having temperature elevations to 39.4° C. A repeat ultrasound on 12 March 1991 showed a 10cm cul-de-sac mass, and thus a decision to perform surgery was made.

On 15 March 1991, after insertion of ureteral catheters, a total abdominal hysterectomy, bilateral salpingo-oophorectomy, and salpingo-ovariolysis was performed. Severe bilateral chronic pelvic adhesions due to chronic pelvic inflammatory disease were encountered. Both ovaries and tubes were densely adherent to the cul-de-sac and posterior surface of the uterus. The left ovary contained an ovarian abscess, which on culture demonstrated *Staphylococcus aureus*, coagulase negative. The right ovary was normal. The patient had an uncomplicated postoperative course and was treated with mezlocillin. Her white blood cell count gradually dropped to 8,500/mm.[3] She was discharged on the fifth postoperative day.

Discussion

Despite the fact that minor gynecologic procedures such as endometrial biopsy, D&C, cone biopsy, and laser vaporization are performed through a bacterially colonized vaginal field, significant clinical infections infrequently arise.[2] An epidemic of pelvic inflammatory disease has been documented by multiple national centers, but the damage caused by these infections is often only discovered when laparoscopy is performed for the investigation of chronic pelvic pain, infertility, or ectopic gestation.[3,4] Silent acute subclinical disease is often evident only by culture of offending organisms such as *Neisseria gonorrhea, Chlamydia trachomatis, Mycoplasma hominis, beta hemolytic streptococcus,* or *Staphylococcus*.[3] These organisms appear in infected sites from tube to cervix. Although it is not common practice to screen these organisms before proceeding to gynecologic surgery, serious infections seldom result.

Ovarian abscesses are infrequently encountered in gynecology and are thought to result from infestation of the corpus luteum by bacteria, indirectly from hematogenous spread during sepsis, from IUD associated endometrial infection, through surgical trauma, or even direct extension of a local infection, such as a diverticular abscess.[5] Usually patients with ovarian or tubo-ovarian abscess are seriously ill, requiring immediate medical and/or surgical therapy. Anaerobic organisms are the most frequently encountered pathogen.[6]

Recently, Rosenzweig et al reported a case of tubo-ovarian abscess arising after excisional conization of the cervix by carbon dioxide laser in a patient who was at high-risk for pelvic inflammatory disease by virtue of a history of gonococcal cervicitis, hepatitis B infection, and tuberculosis.[2] They recommended preoperative screening cultures and consideration of prophylactic antibiotics in high-risk patients prior to laser surgery.

Our case suggests that serious sequelae can occur in an apparently low-risk patient and it stresses the need to carefully assess patients with unexplained or unexpected symptoms after gynecologic procedures. This case also appears to represent an exception to the dictum that patients with intraovarian or tubo-ovarian abscesses are always very ill, and that absence of a fever (in the exception of HIV-positive patients), a decrease in the clinical symptomatology, and a clinically benign course after antibiotic therapy is indicative of cure and obviates surgical intervention, be it abscess drainage or laparotomy. Our patient was not seriously ill at any point in time except for initial presentation. Surgery was delayed in this case and not initially contemplated because the clinical course was compatible with a sterilized abscess. It was not until a combination of a persistent mass on ultrasound, chronically elevated sedimentation rate, chronic anemia, and finally the emergence of fever and pain three months later that it was suspected bacterial activity was still present in the abscess. In this case, the patient underwent a total abdominal hysterectomy and bilateral salpingo-oophorectomy, but the potential for ultrasound guided drainage or laparoscopic drainage of an abscess might be considered.[5,7]

In summary, we describe the development of an ovarian abscess following laser vaporization of the cervix. Therefore, close observation for infectious morbidity, even in the apparently low-risk patient, should be maintained.

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Abstracts: The 1993 Medical Student Research Day

THE UNIVERSITY OF CONNECTICUT SCHOOL OF MEDICINE

Introduction

The University of Connecticut School of Medicine encourages student participation in clinical and basic research. Medical students at the School of Medicine have the unique opportunity to work in the summer for many of the faculty who teach them during the school year. These students give up their summers to work in clinical and basic research projects with the hope of contributing to our knowledge about disease and patients' welfare. Each year a special day is set aside to recognize these students. For the Thirteenth Medical Student Research Day, twenty-four students presented their work either orally or in poster form. We are presenting six abstracts from the oral presentations. We recognize these students and faculty not only for their results which are summarized here, but also for the extra effort they have made for the love of learning.

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Because platelets, small, enucleated cells, are difficult to work with pharmacologically, researchers studying platelet signaling systems search for a larger, nucleated cell to serve as a platelet model system. To evaluate their use as a model system, Dami cells, a megakaryoblast cell line isolated from the peripheral blood of a patient with megakaryoblastic leukemia, were examined for signaling proteins, pp60$^{c\text{-}src}$, pp59^{fyn}, and phosphotyrosine proteins. Unstimulated platelets and a Dami cell membrane and cytosol homogenate were subjected to sodium dodecyl sulfate polyacrylamide gel electrophoresis and Western blotting. Phosphotyrosine proteins were barely detected and pp60$^{c\text{-}src}$ was not detected in undifferentiated Dami cell samples as well as samples induced to differentiate with phorbol myristate acetate. Extremely low levels of pp59^{fyn} were demonstrated in Dami cells as compared to platelets. We conclude that the Dami cell line is not an adequate model system to investigate platelet signal transduction.

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The Effect of Kurosaka Screw Divergence on the Holding Strength of Bone-Tendon-Bone Grafts

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A torn anterior cruciate ligament (ACL) may be reconstructed by using a femoral bone plug-patellar tendon-tibial bone plug graft.[1] Fixation technique is a critical factor influencing holding strength.[2,3,4] Interference fixation involves fitting a screw between the bone plug and bone tunnel in either an antegrade or retrograde direction, with threads tracking towards or away from the articular surface, respectively. A porcine knee model demonstrated the effects of Kurosaka screw divergence on linear load to failure in simulated ACL reconstructions. Screws placed in the antegrade direction had statistically significant decreased holding strength when diverged either 15 or 30 degrees from the bone plug into the tunnel; retrograde placed screws showed an equivalent decrease at 30 but not 15 degrees ($P<0.05$). This suggests that, in the event of screw divergence from parallel at the time of ACL reconstruction, retrograde screw placement may offer significant added security.

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Attitudes and Behaviors of Physicians and Factory Workers Toward Smoking and Smoking Prevention in Shanghai, China

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Despite the fact that tobacco smoking causes serious illness, the prevalence of smoking is rising in China.[1] We surveyed 113 physicians at the Ren Ji Hospital in Shanghai and 62 employees of the Shanghai Shipyard, in order to determine the effect of gender, age, and education upon smoking behaviors and attitudes toward smoking prevention.

In both groups we found significant sex-related differences in smoking behaviors. The prevalence of daily and occasional smoking among male physicians was 55.1%; among male shipyard workers it was 80.4%. Only 2.3% of female physicians and 12.5% of female shipyard workers reported having ever smoked. With regard to patient counseling, only 21% of all physicians reported that they often advise asymptomatic smokers against smoking. Smoking cessation and prevention efforts could be improved by both increased counseling of asymptomatic smokers and efforts to decrease the prevalence of smoking among male physicians.

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Hispanic and Black Adolescents and Their Knowledge and Attitudes About Sexually Transmitted Diseases (STDs)

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Background

This study examined the STD knowledge of inner-city youths in Hartford, and psychosocial factors that influence their sexual behavior.

Methods

165 surveys were administered at the Community Health Services Clinic. Participants were between the ages of 13-18; 52% were black and 48% Hispanic, 79% were female and 21% male. Statistical interpretation was conducted comparing age, ethnicity, and gender against knowledge and sexual behavior.

Results

The 13-14 year olds had a markedly lower level of knowledge than the older participants. Hispanics knew less than blacks (P=.039). Males performed lower than females (P<.03), and exhibited riskier sexual behavior (P=.01). Sixty-seven percent were sexually active. The average age of first intercourse was 13-14. Adolescents preferred receiving information about sex from their doctors over any other source.

Conclusions

This study highlights issues that should be addressed in STD education. With the average age of first intercourse being 13-14 and the poor knowledge of this age group, sex education must begin earlier. It must educate on "symptoms" because adolescents need to know when to seek treatment thereby reducing health complications and decreasing the spread of infections. Education must be culturally sensitive and target males. Physicians should counsel adolescents for they are the preferred source of sexual information.

Differences in Bone Mineral Density Between Endurance and Resistance Trained Males

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Bone is a dynamic tissue that is constantly monitoring and changing to accommodate external stresses put on it. The purpose of this study was to evaluate differences in bone mineral density among high intensity motion (resistance trained group), high repetition (endurance trained group), and daily activity (control group). Subjects were Caucasian males (21-42 years) whose aerobic capacity (modified Balke protocol), strength (maximum bench press), and bone mineral density (dual energy x-ray absorptiometry) was recorded and evaluated using an analysis of variance with a Newman-Keuls post hoc analysis (P<0.01). The resistance trained group had significantly greater bone mineral density than either the endurance trained or control groups at the lumbar spine, proximal femur, and for the total body. Resistance trained athletes using low repetition/high load exercise had greater bone mineral density compared to endurance trained athletes using high repetition/low load exercise and controls.

Do Parental Concerns Predict a Diagnosis of Attention Deficit Hyperactivity Disorder?

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Introduction

Parents come to pediatricians with concerns about their child's behavior and development. Pediatricians must assess the importance of parental concerns in evaluating the child. Although parental concerns are extremely important in identifying the existance of a problem, they are not good predictors of a specific diagnosis of attention deficit hyperactivity disorder (ADHD).

Methods

Parents of 245 school-aged children listed concerns at the time of evaluation. These concerns were grouped into general categories, including inattention, impulsivity, and overactivity, and ADHD specified. Concerns were compared with diagnoses received.

Results

Significant problems were diagnosed for 92% of patients (38% ADHD). Each category of concern had low sensitivity for ADHD (0.31-0.56) and poor positive predictive value (0.45-0.57).

Conclusion

Attention to parental concerns is important in identifying children with problems, but specific concerns are poor predictors of a specific diagnosis of ADHD.

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EPITOMES OF PROGRESS

Important Advances in Clinical Medicine

Pathology

The Council on Scientific Affairs of the California Medical Association presents the following inventory of items of progress in pathology Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of these items of progress in pathology that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Pathology of the California Medical Association, and the summaries were prepared under its direction.

Human Prion Diseases

PRIONS are the pathogenic agents of a group of dementing diseases associated with the production of a unique amyloid protein called prion protein (PrP). Prion diseases are novel in that they are both transmissible, or infectious, and hereditary. These diseases are known by a variety of synonyms, including human spongiform encephalopathy, "slow" (unconventional) viral infections, and transmissible dementias.

Prion diseases are linked by several elements. The disease is limited to the brain; there is a lengthy asymptomatic period lasting years or decades; they have a progressive, uniformly fatal clinical course, without remission; they are transmissible to other mammals; and no specific clinical diagnostic tests or therapy exist.

Prion diseases are characterized mostly by spongiform changes in the brain, with varying degrees of PrP amyloid deposition, gliosis, and neuronal loss; there is no notable host inflammatory response.

Prions are highly resistant to inactivation by procedures that kill viruses and bacteria by denaturing nucleic acids, but they are inactivated by procedures that denature proteins, including 1N sodium hydroxide or hypochlorite solutions and autoclaving. Prion protein is a sialoglycoprotein encoded in DNA (but devoid of any nucleic acid) that undergoes a series of posttranslational modifications to produce an abnormal isoform; this polymerizes to form PrP amyloid. Although the precursor molecule of PrP is found in most human tissues, its normal function has yet to be elucidated.

Four human prion diseases are recognized: Creutzfeldt-Jakob disease, kuru, Gerstmann-Straussler-Scheinker syndrome, and fatal familial insomnia. Whereas the clinical symptoms vary, including dementia, ataxia, myoclonus, and insomnia, they are thought to represent variations of the same disease process.

The Gerstmann-Straussler-Scheinker syndrome and fatal familial insomnia are exceedingly rare diseases found in familial clusters, being transmitted in an autosomal dominant manner. Recent evidence indicates that both diseases are caused by several different single-codon substitutions in the PrP gene. These germline mutations result in a slightly abnormal PrP molecule, the presence of which is always lethal.

Kuru is a fascinating disease localized to the Fore region in New Guinea that has been shown to be transmitted by ritualistic cannibalism. The eradication of cannibalism should result in the extermination of the disease; no new cases have developed in persons born since cannibalism ceased. Hence, kuru appears to be an orally transmitted infection.

Creutzfeldt-Jakob disease is, by far, the most common prion disease, with an incidence of about one case per 1,000,000 people per year. The most dramatic cases of Creutzfeldt-Jakob disease are those wherein the infection

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has been iatrogenically transmitted, such as by corneal grafts, intracranial electrodes, cadaveric dura mater grafts, and the intravenous administration of growth hormone derived from pooled cadaveric pituitary glands. Also, well-defined familial clusters of Creutzfeldt-Jakob disease exist, such as in Libyan Jews, in whom the disease is transmitted in an autosomal dominant manner like the Gerstmann-Straussler-Scheinker syndrome or fatal familial insomnia. Most cases of Creutzfeldt-Jakob disease, however, are sporadic and thought to represent random mutations of the PrP gene.

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Hepatitis C Screening and Blood Safety

BLOOD transfusion is now safer because of routine screening for the antibody to hepatitis C virus (anti-HCV). The risk of posttransfusion non-A, non-B hepatitis has dropped from as high as one in 100 to less than one in 3,300 per unit received since May 1990 when "first-generation" enzyme immunoassay (EIA-1) screening began. Although hepatitis C virus (HCV) is not the only virus capable of causing posttransfusion non-A, non-B hepatitis, it is thought to account for at least 90% of cases. Further improvement in safety is expected with the "second-generation" methodologic enzyme immunoassay (EIA-2), which replaced EIA-1 in March 1992. Enzyme immunoassay 2 has improved specificity over EIA-1 with no loss of sensitivity, yielding fewer "false-positive" results, that is, reactivity without infection, based on follow-up studies of transfusion recipients and using "confirmatory" testing.

Investigational confirmatory techniques consist of an antibody detection using a modified Western blot (the recombinant immunoblot assay), a neutralization assay, and direct testing for HCV RNA by polymerase chain reaction. Blood specimens reactive by EIA-1 or EIA-2 have been shown to correlate with disease in the transfusion setting. Although the 40% to 70% falsely reactive rate with EIA-1 has been reduced significantly (to less than 30%) by the use of EIA-2, research efforts for improved "third-generation" techniques (still based on nonstructural proteins) are already under way. In addition, the control of specimen storage and handling is critical for valid testing.

More than 30 million units of donated blood have been screened with the EIA-1 anti-HCV test, resulting in the exclusion of between 120,000 and 330,000 (0.4% to 1.1%) blood donors who were unknowingly anti-HCV-reactive. Because nearly 50% of persons infected by HCV have asymptomatic but persistent liver damage, including chronic active hepatitis, cirrhosis, and even hepatocellular carcinoma, research to minimize or interrupt the natural course of this disease is indicated. Asymptomatic former blood donors provide an identified pool of potential subjects who would be directly benefited by such research efforts. Transfusion recipients of blood donated in 1992 can expect more than a 20-fold reduction in the risk of posttransfusion hepatitis because blood is screened for anti-HCV.

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Acquired Immunodeficiency Syndrome Vaccines

THE development of an effective vaccine against the human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) is urgent and difficult. A successful vaccine must protect against cell-associated and cell-free virus at genital mucosal surfaces and in the bloodstream and must exert broad protection against the tremendous genetic variation exhibited by the virus. Because we do not understand the nature of protective immunity against HIV or have an animal model of HIV-1-induced disease, we must rely heavily on animal lentiviral infections to guide us toward a deeper understanding of the pathogenesis of the virus and the development of an effective AIDS vaccine.

The picture from the animal lentivirus models, however, is still unclear. Using recombinant HIV-1 envelope vaccines, a few chimpanzees have been protected against infection with a low dose of the homologous strain (IIIB) of HIV-1, apparently by the induction of a threshold level of neutralizing antibodies. Similar recombinant envelope vaccine approaches, however, have not been generally effective in protecting against challenge infection in the other animal lentivirus models. In these other animals, the best protection has been achieved with vaccines made of inactivated whole virus or attenuated live virus, but the mechanism of protection remains uncertain and such whole-virus approaches are not considered safe or practical for humans.

The shortfalls of these experimental vaccines are important: they require at least three injections over several months; the immunity is rather short-lived (less than a year); and the protection does not extend to intravenous challenge with higher doses of cell-free virus, to intravenous infection with cell-associated virus, or to infection across an intact genital mucosa. None of the experimental HIV-1 vaccines have yet been tested in chimpanzees against widely divergent HIV-1 strains such as occur in nature. In general, the immune protection elicited by the experimental vaccines in animals appears to convey a complete block to infection after challenge. This type of "sterilizing immunity" may be required of a vaccine to prevent later viral activation and disease, but it may also explain why the protection is so limited and why antiviral cytotoxic T-lymphocyte activity is not usually induced by these vaccines. The induction of strong $CD8^+$ cytotoxic T-lymphocyte activity is almost certainly a requirement of any truly efficacious HIV vaccine, and this may depend on a live vector or an attenuated live virus approach.

In the United States, seven different phase 1 and 2 trials, using candidate HIV-1 recombinant envelope vaccines and adjuvants, are under way in more than 500 volunteer uninfected people. Two trials use core peptides (p17 and p24), and one trial uses inactivated (gamma irradiation and B-propiolactone) envelope-deficient whole HIV-1. In general, these immunogens have proved safe and immunogenic, but they have induced mainly type-specific neutralizing antibody of short duration (less than six months) and low titer (less than that seen in natural infection) and no $CD8^+$ cytotoxic T-lymphocyte activity. Live vaccinia vaccine (HIV-recombinant envelope) priming followed a year later by boosting with an HIV-envelope subunit (expressed in baculovirus) has had some encouraging results, but the vaccinia vector would not be safe for large efficacy trials unless further attenuated. Also, live vaccinia vectors would not be effective in vaccinia-immune persons. None of these phase 1 or 2 HIV-I vaccine candidates have elicited the strong, durable, broadly reactive humoral and cytotoxic T-lymphocyte immune responses needed to justify larger-scale efficacy trials.

On the optimistic side, several hundred HIV-seropositive but immunocompetent persons who have received the HIV gp160 vaccine after infection have generally responded favorably by generating antibodies and T cells that recognize new antigenic determinants in the envelope. Insufficient time has elapsed to determine whether this treatment will suppress viral replication and delay the onset of AIDS. Evaluating the safety and immunogenicity of various HIV-1 immunogens given to HIV-1-infected subjects will help determine the suitability of these materials for prophylactic vaccination.

The criteria for selecting vaccine candidates for efficacy trials are unsettled, and we must decide on the end points to be used: preventing infection or delaying or preventing disease. For the latter, we need to define surrogate markers to predict disease, such as quantitative virus load, that can be measured early after infection. It is hoped that further preclinical developments in the animal models using different viral immunogens, different adjuvants, different routes of antigen presentation (such as mucosal), novel live vectors (such as bacille Calmette-Guérin and adenovirus), and novel recombinant DNA constructs may yet lead to promising efficacy results as a basis for large-scale testing. In the meantime, high-risk uninfected cohorts are now being recruited and the infrastructure put in place in the United States and abroad for efficacy tests of one or more of the most promising candidate HIV-1 vaccines that may become available in several years. The first vaccines used may be only partially effective, but their early introduction might still prevent many infections, reduce viral transmission, delay disease and provide valuable information that could facilitate future vaccine development. Multiple vaccines that are tailor-made for the predominant HIV strain(s) circulating at different global sites may need to be tested simultaneously. A long-term commitment has been made to vaccine development; this must include realistic expectations and both preclinical and clinical trials.

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Laboratory Evaluation of Inherited Thrombotic Disorders

RECENT advances in the diagnosis of and therapy for thrombotic disease have focused attention on the consulting role of clinical pathologists in the laboratory evaluation of coagulation disorders. Patients referred for evaluation usually have venous thromboembolism, but some may have arterial thrombotic events. Inherited disorders that can be tested for in a coagulation laboratory may result from abnormalities in inhibitors of activated coagulation factors (antithrombin III, protein C, protein S), impaired clot lysis (dysfibrinogenemia, plasminogen deficiency, tissue-plasminogen activator deficiency, excess plasminogen activator inhibitor), or a metabolic disorder associated with vascular disease and thrombosis (homocystinuria).

Although only about 30% of patients with recurrent thrombosis have an inherited disorder identified, the yield of this evaluation can be improved by restricting it to young patients with recurrent thrombosis or patients with thrombosis and a positive family history. The laboratory evaluation should be deferred until two to three months after the acute event (to avoid acute-phase changes that may obscure a correct diagnosis) and after the patient has discontinued anticoagulant therapy. Many laboratories offer both functional and immunologic assays for evaluating these disorders. Because thrombotic disease may result from either quantitative deficiency or a qualitative abnormality of these proteins (for example, antithrombin III or protein C) and immunologic assays may yield normal results in patients with dysfunctional proteins, it is preferable to do functional assays that detect both types of disorders. Appropriate specimen collection, timing, and processing are critical, especially for fibrinolytic assays (tissue-plasminogen activator, plasminogen activator inhibitor). Deficiencies of proteins C and S and antithrombin III are thought to be the most common causes of inherited thrombosis. Previous studies indicating that fibrinolytic abnormalities were common causes of recurrent thrombosis have been recently challenged. A metabolic disorder, heterozygous homocystinuria, has been increasingly associated with arterial vascular disease and should be considered in middle-aged patients with premature arterial thrombosis.

One approach in the laboratory investigation of recurrent thrombosis is to first exclude acquired causes of hypercoagulability—hyperlipidemia, lupus anticoagulant, or malignancy. The presence of venous thrombosis should be initially evaluated with a functional protein C assay and a free protein S antigen assay. If the results of these tests are normal, a functional assay for antithrombin III can be done, followed by testing for dysfibrinogenemia. If the test results are normal, the fibrinolytic system could be evaluated.

Unexplained arterial thrombosis in young patients can be evaluated with an assay of plasminogen activator inhibitor activity, whereas middle-aged patients with premature arterial thrombotic events should be tested for heterozygous homocystinuria using a methionine loading test.

The importance of laboratory monitoring of anticoagulation has been emphasized by studies showing the clinical benefit of adequate heparin and warfarin therapy in treating thromboembolism. Because the responsiveness of commercial laboratory-activated partial thromboplastin time reagents may vary substantially, each laboratory should establish its therapeutic heparin range (activated partial thromboplastin time ratio, 1.5 to 2.5), so that it is equivalent to a heparin level of 200 to 400 U per liter (0.2 to 0.4 U per ml) by protamine titration. Despite the large body of published evidence indicating the clinical importance of using the international normalized ratio format in reporting laboratory prothrombin times, many coagulation laboratories do not use this format, leading to inappropriate anticoagulant therapy for many patients. Increased educational efforts will be necessary to inform practitioners and pathology personnel of the importance of rigorous laboratory control of anticoagulation.

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Enhancing Antibody and Its Role in Acquired Immunodeficiency Syndrome

ANTIBODIES against viral proteins have traditionally been considered beneficial to the host by preventing infection. This principle has been the mainstay of modern vaccine development. It is now known, however, that certain antibody responses may not benefit the host but may, indeed, benefit the virus. One such phenomenon, antibody-dependent enhancement, increases the infectivity of a variety of viruses from several different families. Antibody-dependent enhancement can occur when nonneutralizing antibodies bind to viral surface proteins. The Fc portion of this antibody can then be bound by Fc receptors on macrophages. Viruses that are resistant to lysosomal degradation can then infect macrophages by this route. A second mechanism has been described whereby nonneutralizing antibodies bind to viral surface proteins and activate the complement cascade. Complement proteins, specifically C3, are fixed to the virus. This opsonized virus can then bind to complement receptors on macrophages, lymphocytes, or follicular dendritic cells. The virus can thereby infect these cells through this pathway.

Although in vitro antibody-dependent enhancement has been reported for a number of viruses, it has been difficult to show enhanced infections in vivo. The best documented example is dengue virus where clinically substantial dengue hemorrhagic fever and dengue shock syndrome occur in the presence of enhancing antibodies. Indeed, the severity of disease was correlated to the levels of enhancing antibodies. In vitro and in vivo antibody-dependent enhancement has been described for a number of animal viruses as well and is an important concern in veterinary vaccine development. This phenomenon of antibody-dependent enhancement and the viruses for which it has been observed were recently reviewed.

Infection by the human immunodeficiency virus (HIV) is accompanied by potent host immune responses against the virus. Early in HIV infection, patients have measurable neutralizing antibody titers, antibodies that can lyse HIV-infected cells, and cytotoxic lymphocytes that can kill virus-containing $CD4^+$ lymphocytes. In theory, all of these responses should combine to eradicate HIV infection in the host. Nevertheless, despite these immune responses, persons infected by HIV continue to progress through the full gamut of HIV-induced disease and finally die of complications of the acquired immunodeficiency syndrome (AIDS). This fact led investigators to search for possible adverse immune responses that may complicate the host response to HIV infection. In 1987, investigators first reported antibody-dependent enhancement of HIV infection in vitro. Later reports indicated that this enhancement could occur through both the complement and Fc receptor-mediated mechanisms. It has been difficult, however, to show a clear clinical role for enhancing antibodies in HIV infection. The best data on the role of enhancing antibodies in HIV-induced disease may come from studies using animals. Two separate studies using rhesus macaques and the simian immunodeficiency virus (SIV) have shown that enhancing antibody levels increase throughout the disease course and peak before death of the animals from AIDS. This animal model is arguably the best one for HIV infection. It has also been shown that chimpanzees infected with HIV have antibodies that can enhance HIV infection in vitro. Nevertheless, these antibody levels appear to decline the longer the chimpanzee is infected. Chimpanzees do not go on to have AIDS, nor do they become clinically ill following HIV inoculation.

Formidable difficulties are involved in studying enhancing antibodies in a disease that takes years to become clinically apparent. The average length of time for patients to progress to AIDS is 12 years. Even if high levels of enhancing antibodies resulted in a change in disease progression from 12 years to eight years, it would require a huge clinical sample.

The greatest concerns to practitioners involve the theoretic risk of antibody-dependent enhancement in HIV infection. To date, no one has yet proved that in vivo enhancing antibodies of HIV infection do or do not play a role in disease progression. Circumstantial evidence such as disease progression despite potent immune responses to HIV and vaccine failure in animals suggests that in vivo antibody-dependent enhancement may be a reality. Can the theoretic risks be ignored, thus placing thousands of lives at risk if mass inoculation is given to persons in HIV-endemic areas with vaccines that produce antibody-dependent enhancement?

Despite the protestations of some investigators, mass immunization of many persons in high-risk areas of the world with vaccines that have proved ineffective in animals may occur. If these immunized patients show an increased susceptibility to HIV infection, then enhancing antibodies are important. If such studies progress as planned, we can only hope that antibody-dependent enhancement of HIV infection, unlike dengue virus, will be only an in vitro artifact. At this time, possible risks outweigh any demonstrated benefits to the putative AIDS vaccine being tested. A quick cure is not in sight for this pandemic.

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Iron Deficiency

STUDIES have associated iron deficiency with epithelial changes, impaired immune response, abnormal temperature regulation, deranged catecholamine metabolism, and abnormal physical activity independent of any anemic effects. More recent studies have shown behavioral changes, reduced exercise tolerance, decreased levels of the neurotransmitter g-aminobutyric acid in brain, altered lipid metabolism, and abnormal myelination of the central nervous system. Many of these diverse effects are reversible with iron therapy, whereas others may be partially reversible or permanent.

Of particular interest has been the effect of iron deficiency on the central nervous system independent of any concomitant anemia. Some parts of the brain contain considerable quantities of iron; iron is required for the activity of enzymes such as hydroxylases and monoamine oxidases that are important in brain function. Iron also influences myelination by its effects on lipid metabolism, causing changes in the fatty acid composition and content of lipids in both peripheral circulation and brain. Brain sphingolipid of iron-deficient animals has shown a pronounced reduction of fatty monoenoic acids such as ω9,C18:1 and ω9,C24:1. Iron supplementation of deficient animals results in at least a partial correction of these deficits. Iron is an essential requirement for desaturase enzyme function in liver, and iron deprivation might be expected to depress comparable desaturase activity in the fetal and neonatal brain. Observations to date show that iron deficiency is associated with dramatic changes in the fatty acid composition of myelin-specific lipids such as cerebroside.

Extensive studies done in children and adults indicate disturbances of behavior and cognitive factors with iron deficiency alone. In one study series, infants having iron deficiency with and without anemia tended to score lower in the Bayley scale of mental development than those without sideropenia. A clear sensory disturbance of taste has been well documented in adults with iron deficiency with and without anemia eventuating in pica. A striking form of this disorder is a compulsive craving for ice, or pagophagia. The craving can be corrected with iron therapy before the correction of any accompanying anemia. The links between any neurologic clinical manifestations of iron deficiency and demonstrated biochemical abnormalities are tenuous, but the information to date would justify renewed clinical concern about the status of iron nutrition in people and especially in young children or neonates.

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Molecular Techniques

ONCE a fringe, highly specialized, and esoteric area largely relegated to basic research, DNA-based diagnostic techniques are now applied routinely to anatomic and clinical pathology tests. These techniques involve the manipulation of DNA for the purpose of detecting nucleotide sequences of clinical or forensic importance. These sequences are typically detected by hybridization (specific nucleotide base-pairing) with fragments of DNA or RNA (called probes) containing the complementary sequence. With the isolation (or cloning) of an ever-expanding array of disease-specific genes and sequences, a process now accelerating rapidly under the impetus of the human genome project, the list of available molecular pathology tests is growing weekly.

Specific molecular reagents now exist for the laboratory diagnosis of more than 100 genetic diseases, a myriad of infectious pathogens, tumor markers of diagnostic or prognostic importance, and the generation of individual-specific DNA fragment patterns (fingerprints) for paternity testing, forensic identification, twin zygosity determination, and transplant engraftment confirmation. The target for these hybridization reagents may be crude extracts of blood, tissue or body fluid DNA (the dot blot), electrophoresed fragments of restriction endonuclease-digested genomic DNA (the Southern blot), routinely processed tissue sections mounted on glass slides (in situ hybridization), or even metaphase or interphase chromosome spreads (molecular cytogenetics). Applications include the rapid identification of infectious agents (such as mycobacteria) without the need for lengthy microbial culture and biochemical species characterization procedures, prenatal diagnosis and carrier testing for genetic disorders (such as cystic fibrosis), and the diagnosis and staging of neoplastic processes by the detection of characteristic gene rearrangements and alterations in oncogenes and tumor suppressor genes (such as lymphoma and adenocarcinoma of the colon).

Spanning all of these applications, the use of the polymerase chain reaction continues to revolutionize the field, enhancing both the sensitivity and specificity of molecular techniques by many orders of magnitude. By replicating discrete regions of genomic DNA with DNA polymerase, the technique amplifies exponentially the amount of analyte available for study, allowing testing of the most minute clinical specimens (even single cells) while enabling one to home in on the specific region or target sequence of interest. It greatly simplifies the search for mutations associated with genetic diseases and malignant neoplasms and for microbial pathogens present in sparse infections (for example, human immunodeficiency virus in blood) and in dead or fixed specimens that are no longer culturable. The polymerase chain reaction can also be applied to DNA fingerprinting (by amplifying hypervariable regions of the human genome), allowing the identification of trace or degraded forensic specimens. By enabling genetic analysis of single cells, it has opened the way for preimplantation and even preconception diagnosis.

Like any new technology, molecular pathology has some drawbacks. Many of these tests are technically difficult, time-consuming, and expensive, requiring specialized resources and personnel often unavailable outside large academic centers and reference laboratories. Numerous ethical issues arise, impinging on matters such as genetic privacy, abortion, insurability and stigmatization, patient rights, and eugenics. Despite these challenges, diagnostic DNA techniques have already transformed and revitalized the practice of pathology in many exciting ways.

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THE INSTITUTE OF LIVING

HARTFORD HOSPITAL

Quadriplegia—Some Problems and Some Modern Solutions

STEWART A. KING, M.D.

THE strictures imposed by quadriplegia are daunting in and of themselves: the healthy individual is transformed by disease or injury from independent to dependent, from a life with unlimited aspirations to an existence with severely constricted goals, from a being without major health concerns to one now faced with problems induced by every normal bodily function. With assistance, these obstacles of the mind and of the body can be reduced to manageable proportions but obviously never fully eliminated.

It is unfortunate that many of the immense variety of products designed to aid the handicapped suffer in significant ways from inadequate or inappropriate design. What is even worse is the reluctance of major manufacturers to modify these poor designs, and still worse the resistance of many of the major purchasers (the clinics and hospitals) to changing to those products that, because of superior design, are infinitely more useful and more comfortable for all—not just the disabled—patients. In this paper I have attempted to place in perspective for the healthy a specific problem faced by many quadriplegics—difficulty or inability to communicate. Have any of you, while temporarily disabled for any reason, ever been unable to communicate with your caregivers? Can you begin to imagine the sense of futility experienced by the previously articulate individual now incapable of transmitting the simplest of desires to those who are responsible for his care? I can assure you that the frustration and rage can be overwhelming!

Communication—oral and written—remains an immense psychosocial problem for the patient with a tracheostomy. I now have available for my use four different methods of communicating. You are all familiar with the first of the four—the use of the computer and a word-processing program for written communication. You may also be familiar with some or all of the devices I am currently using to speak, but I beg your indulgence while I amplify.

Intelligible Speech for the Tracheotomized Patient with Vocal Cord Function

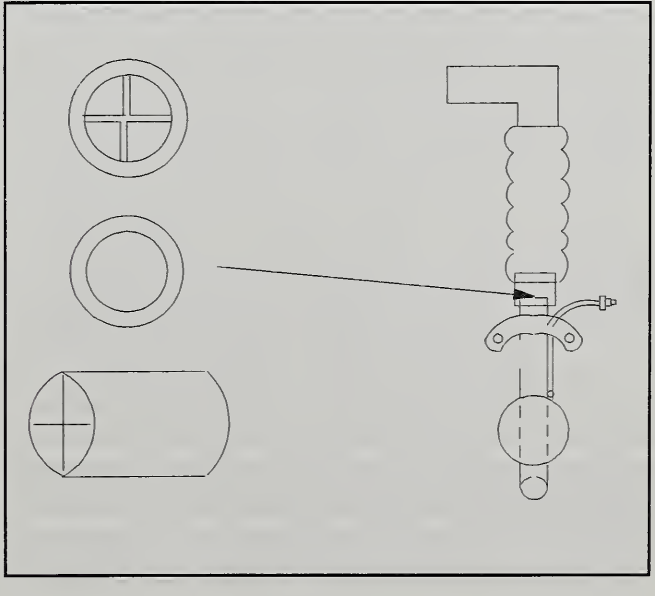
Three subgroups of tracheotomized patients may be defined, each with different problems and with differing solutions.

The first group consists of patients with an uncuffed tracheotomy tube who may or may not be ventilator-dependent. This group may be able to speak with no assistive device.

The second group includes ventilator-dependent patients with cuffed tubes who are able to tolerate prolonged periods of cuff deflation. This group may also be able to produce intelligible speech without devices.

I believe, however, that these individuals and those in the first group will both benefit from use of the Passy-Muir Valve. This is a simple one-way valve which is

Figure 1.—Passy-Muir Valve



STEWART A. KING, M.D., Surgery, retired in 1985, Darien.

Reprints: Stewart A. King, M.D., 27 Harbor Road, Darien, Connecticut 06820

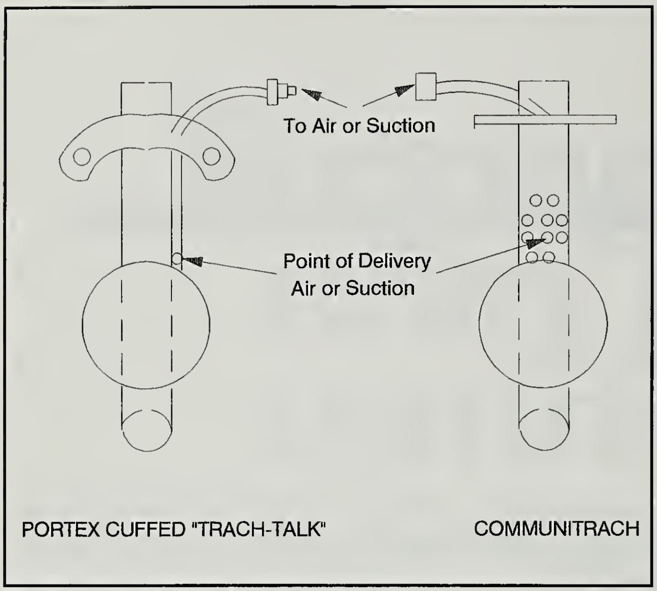


Figure 2.—Talker Tracheostomy Tubes

attached to the flex-tube at the tracheotomy tube opening. The valve opens during inspiration and closes in expiration forcing the expired air out through the vocal cords thus allowing speech. Use of the valve permits ventilator-dependent individuals almost normal speech, providing they are able to tolerate the complete deflation of the cuff necessary to divert the air up the trachea to the cords.

The third group comprises ventilator-dependent patients with a cuffed tube who cannot tolerate cuff deflation. If shortness of breath or increased secretions on deflation of the cuff make normal speech or use of the Passy-Muir Valve impossible, the Portex Cuffed "Trach-Talk" tube is a real alternative.

The Communitrach tube I originally used was taken off the market in 1991 and I do not know if it has ever been returned to production. It was designed with an external Luer lock port which connected via narrow tubing with the space between the inner cannula and the outer tube shell. The shell had multiple perforations above the cuff which allowed it to be used to suction the proximal trachea. One spoke by either blowing or sucking air through the perforations and then through the vocal cords.

The Portex Cuffed "Trach-Talk" tube I have used since September 1991 is slightly different in design, using a narrow catheter outside the main tracheostomy tube to suction or to deliver air above the cuff but below the cords. The functional concept for both tubes is similar, but Concord-Portex in Keene, New Hampshire (now S.I.M.S.—Smith Industries Medical Systems), has been extremely obliging in modifying their tube by substituting a Christmas tree for the original thumb port suction adapter, and by moving the open inner end of the "talker" tube up a half centimeter, and from the nine to the eleven o'clock position on the shell. It "talks" very well indeed!

The literature with the tubes recommends talking by having someone occlude the "talker" opening with a finger and turning on positive pressure oxygen. I found that this dried the cords, and at the same time increased secretions below the cuff.

With the Christmas tree "talker" adapter, attaching the adapter to suction tubing and plugging the suction machine into a standard appliance module, a quadriplegic can use any switching device and remote control to turn on (and off) the suction and talk at will.

Because of the frequent use of suction to talk and the consequent suctioning of mucus from the trachea, the inside of the "talker" adapter becomes coated with mucus. CIBA Cytology Brush Swabs are a perfect size for cleaning the adapter, and this should be done at least once a week.

For those individuals without vocal cord function, tone generators allow speech by oral tone modification, and sound vibration devices applied externally to the pharynx are similar. Alphabet and symbol boards, and devices such as TouchTalker, activated by a variety of switches, by nod or eye-blink, or by head-wands, penlights, or other pointers are also used by those who cannot speak.

A wide range of devices which afford the paralyzed individual considerable control over the surrounding environment are readily available from numerous vendors.

The switches for these controls range from infra-red switches operated by eye blink, to a variety of pressure-sensitive single switches, to sip and puff switches, to single and dual action tongue switches. For those with some residual hand and finger function there are a number of other pressure-sensitive units. With these switches one can turn on and off a variety of appliances, run a computer, communicate (speak) using speech synthesizers, turn pages with an electric page turner, and control an electric bed and other environmental control devices with no upper extremity function whatsoever.

Chin, head motion sensors, sip and puff, and tongue switches are available to replace joystick hand controls if these cannot be used to guide power wheelchairs.

Since the particular switch one uses must vary with the degree of disability, establishing what type switch will best meet one's needs becomes of paramount importance. Defining what devices will be controlled and in what setting (bed, wheelchair, at home, or at work) has significant cost implications.

I currently use a dual action tongue switch and System Remote Control from DU-IT Controls; and from Words+, to run my computer, I use a Scanning Keyboard Emulator called WSKE.

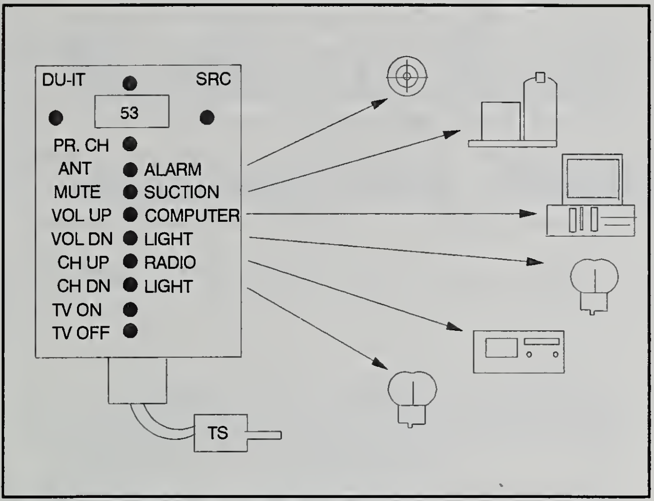
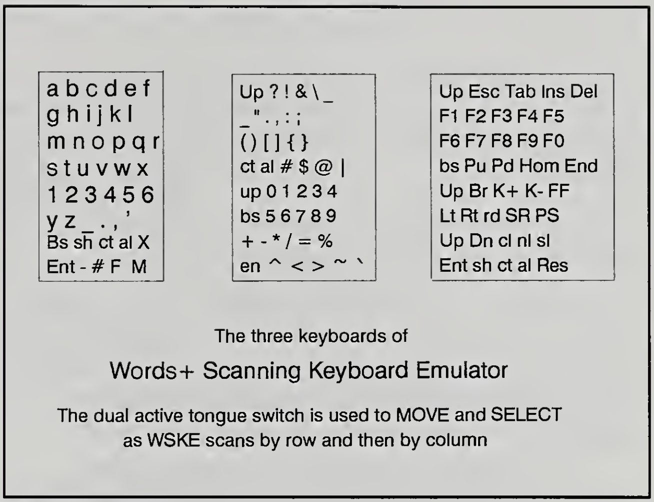


Figure 3.—System Remote Control



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Up Esc Tab Ins Del
F1 F2 F3 F4 F5
F6 F7 F8 F9 F0
bs Pu Pd Hom End
Up Br K+ K- FF
Lt Rt rd SR PS
Up Dn cl nl sl
Ent sh ct al Res

The three keyboards of
Words+ Scanning Keyboard Emulator
The dual active tongue switch is used to MOVE and SELECT
as WSKE scans by row and then by column

Figure 4.—WSKE

The primary concern in selecting those environmental controls one desires has to be financial. There are so many devices that can be run by any of the command switches, with or without a computer interface, that one must be selective or the cost becomes far too great.

There are gooseneck-mounted, bed-mounted, remote controls which, using any of the command switches, perform all the functions of TV, VCR, and cable box remotes as well as providing on-off control of appliances via receiver modules.

More complex (and more expensive) bedside command centers are available to provide still greater control over devices such as electric bed controls and the telephone. Still more expensive are the mobile environmental control centers which allow this same extensive control of the devices around one from the wheelchair.

For individuals with (or without) some cognitive impairment, MINSPEAK from Semantic Compaction Systems, with devices from Prentke-Romich, may be of real value.

Another means of oral communication available is an internal speech synthesizer—internal, because, except for the speaker, it is built into the computer, hence extremely portable.

The other type of speech synthesizer I use is a sophisticated, self-contained external unit called MultiVoice, designed by the Digital Equipment Corporation and the Institute for Applied Technology at Boston Children's Hospital. The computer comes in a variety of shapes, sizes, and costs and is the ideal vehicle for both oral and written communication for the handicapped.

Before making any purchase decisions, one should have a full understanding of what the requirements are, what software programs are offered, and what each of these packages involves. One must be certain, before deciding on specific computer hardware, that the software programs required to operate the computer are designed for that hardware, and vice versa. The command switch and the software must interface efficiently and must meet the individual's special needs.

If synthesized speech is necessary or desired because of impaired vocal cord function, the laptop computer becomes the ideal choice allowing speech to go with you. There are a number of speech synthesizers on the market with their own specific hardware and software. The naturalness of the voice varies, probably in direct proportion to the price.

A variety of scanners and a Hayes-type modem are helpful in inputting text and graphics materials either for review, or for later integration into other documents.

Recently Dragon Systems and IBM have introduced IBM VoiceType—a superior voice recognition program and equipment which allows direct, much more rapid computer input via the spoken word. I believe this type of program carries immense benefits not only for the handicapped, but also represents the future for physician and nursing workstations in every medical office. Currently the limitation lies in the program's slow recognition speed (about 50 words a minute), but once this speed has doubled, direct dictated computer input will be a widespread reality.

The University of Virginia and LC Technologies have developed an EyeGaze Computer System which uses infrared reflected off the retina as the input device. This too holds great promise for the quadriplegic.

In summary, modern technology, the computer, and common sense afford quadriplegics almost unlimited opportunity to overcome most of the physical and many of the psychologic problems facing them. Communication remains a major problem, but now there are solutions even for those most severely impaired.

Canned Answers

Cost.—My system cost about ten thousand dollars, but mine is a basic system. It could easily reach twice or three times that cost, with the controls and devices currently available.

The prototype EyeGaze computer equipment and software came to 25 thousand dollars.

The IBM Voice type basic software came down from about nine thousand to about three thousand dollars in the first year. Currently the system uses IBM PS2 hardware, which makes it expensive compared to clones. That will change.

My Equipment.—I am using a 33 megahertz 386 DXT clone, with a 200 megabyte Connor hard drive, 4 megabytes of RAM, and 5-1/4 and 3-1/2 inch floppies.

My lap top is a Toshiba T 1000 XE, with a 20 megabyte hard drive.

The Whiskey program is a TSR (terminate and stay resident) program. It uses about 230 K of RAM, making it incompatible with many other large software programs. A good deal of program management is necessary.

My software mainstay is Word Perfect. The drawings were done with Lotus Free Lance Plus, but I also use Lotus 123 and, under Windows, I have Coerel Draw. I have to access these, because of the size of Whiskey, by using the lap top.

The special equipment like the switches, and the switch operated remote controls, must be obtained from vendors like DU IT. Ancillaries such as appliance modules and the Power House are available from Radio Shack.

My Speech.—Both Smooth Talker and my speech with either of the talking tracheostomy tubes, are readily understood by those who are frequently with me. There is a learning curve; unlike lip reading, which some never master, these modalities are understood by all.

Using suction, I speak in inspiration. In addition to more prolonged speech, moist cords, and less tracheorrhagia, there is the psychologic benefit of being able to control your own speech.

MultiVoice is a product of the Digital Equipment Company and the Institute for Applied Technology at Boston Children's Hospital. Instant Phrases are a part of the synthesizer software, and can be preprogrammed.

I will close with the following clinical notes.

I have two stomas. While I was in practice, I was unaware of the profusion of nerve endings in granulations. I now know my granulations are overgrown when the stomas become sensitive. Cautery with silver nitrate eliminates the discomfort for about three weeks.

The ALS has left me quadriplegic. My major clinical problems are meal-time aspiration of food, and pressure-pain over my right ischial tuberosity. Urgency is also annoying. Every seat cushion should have a coccygeal cut-out. No hospital bed patient should have to contend with the usual type of a urinal, when a not perfect, but much better design is available from Baxter Travenol.

Arguyle trach* suction kits are poorly designed for multiple use at home. Reg U Vac kits from Bard Parker are better, but would benefit from some redesign in order to afford better separation of clean from dirty. I am a member of the national board of an organization of speech impaired individuals called Hear Our Voices. On review, they suggested that no purchase be made without the aid of someone knowledgeable in augmentative communication.

A speech pathologist, neurophysiologist, your local rehabilitation center, Marion Hall at Newington Children's, and Deewitt Zuse* in Branford, can help.

Finally, my thanks to my wife and family and to my care givers for their support and encouragement.

I hope you will agree that this paper does expose, if sketchily, some needed but poorly comprehended information about quadriplegia and its attendant problems and solutions.

In addition to the author's list of Connecticut-based resourses for handicapped individuals with speech difficulties, there are:

1. ConSAAC—the Connecticut Society for Augmentative and Alternative Communication, which is made up of experts from speech pathology, is free to families and users of equipment, has quarterly presentations, and frequent newsletters. ConSAAC is a branch of USAAC—the United States Society for Augmentative and Alternative Communication, which is a branch of ISAAC, the International Society.
2. Connecticut Muscular Dystrophy Association in Milford.
3. Muscular Dystrophy Association clinic at the University of Connecticut.

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*The Argyle trach and Dewitt Zuse aberrancies were hangovers from the phonemic and syntactic changes required by MultiVoice (and, I assume, most other speech synthesizers) to adequately translate the written word into intelligible speech.

What Every Doctor Needs to Know

Americans With Disabilities Act

The **Americans with Disabilities Act** [ADA] is a sweeping civil rights measure that will affect all businesses. The ADA prohibits discrimination against people with disabilities in employment, business, services, transportation, state and local government services, and telecommunications.

Unfortunately, the ADA contains many vague terms. Rather than using more specific language, lawmakers left it to the courts to interpret the Act through litigation. As a result, the meanings of many of these terms will not be settled until the conclusion of lawsuits filed under the Act. This situation makes it difficult to guide those covered by the Act's prohibitions and requirements.

Who's Disabled?

A disabled person is someone who: [1] has a physical or mental impairment that seriously limits one or more major life activities; or, [2] has a record of such impairment; or, [3] is regarded as having such an impairment.

Physical and mental impairments include, but are not limited to, contagious and noncontagious diseases such as tuberculosis, cancer, drug addiction and alcoholism as well as conditions such as orthopedic, visual, speech, and hearing impairments.

Major life activities are functions such as caring for oneself, performing manual tasks, seeing, speaking, breathing, and working.

Are People With HIV Considered Disabled? Yes. Individuals infected with the HIV virus are specifically protected by the ADA.

Does The ADA Apply To You?

Yes . . . to accommodations rules and maybe ... to employment regulations. The ADA contains sections which deal with **employment** [if you have more than 15 people on your staff] and **public accommodations** [businesses or establishments which are open to the public.]

The employment section of the ADA currently applies to you only if you employ 25 or more workers; if you employ 15 or more workers, the Act will apply to you starting July 26, 1994. If you employ less than 15 people, ADA employment requirements do not apply to you.

The ADA prohibits discrimination in all employment practices including hiring, compensation, and firing. The ADA requires employers to hire workers with disabilities if, without the disability, the worker is otherwise the best qualified individual for the job. This means that a qualified individual with a disability who can perform the essential functions of a job without accommodation, or with "reasonable accommodation," must be given an equal opportunity to be hired or retained as an individual without a disability.

What Does "Reasonable Accommodation" Mean?

It means that the employer must modify job requirements or physical surroundings to allow the disabled employee to perform the essential functions of a job, so long as the accommodations do not present an undue hardship for the employer . . . meaning that they are not excessively expensive or create a significant difficulty for the employer.

What Are The Access Requirements For Patients With Disabilities?

The public accommodation or access section applies to all businesses, including physician

UNIVERSITY OF [illegible]AND AT

American Medical Association
Physicians dedicated to the health of America

offices, regardless of the number of people employed. But, if you employ fewer than 10 people and have gross receipts of $500,000 or less, a lawsuit can't be brought against you under the access section until after January 26, 1993.

The access section requires that you do the following:

- Remove structural barriers in existing buildings that are "readily achievable," meaning that they can be accomplished without great difficulty or expense, such as adding a ramp over a few stairs.
- Design and construct ***new*** buildings or remodel in compliance with ADA accessibility guidelines.

Your office will be in compliance if waiting areas, a nearby bathroom, and some examining rooms are accessible.

What Does The ADA Require That I Do For Hearing Or Visually Impaired Patients?

The ADA requires that you furnish and pay for auxiliary aids and services when necessary to ensure effective communication with individuals with hearing or visual impairments, "unless an undue burden or fundamental alteration" of services would result. You should consider the needs of the patient when deciding whether a qualified interpreter, notetaking, Brailled materials, or other devices are appropriate for effective communication. Patients should tell you about their needs for auxiliary aids before their appointments.

Does The ADA Require Me To Treat All Patients?

No. Although you cannot refuse to treat a person based on his or her disability, you need not treat an individual whose medical needs are outside the area of treatment you normally render to nondisabled individuals, or if the individual's disability itself creates complications which you lack experience or knowledge to address. You are also ***not*** required to provide services to an individual if the individual "poses a direct threat to the health and safety of others." A "direct threat" is a significant risk to the health or safety of others that cannot be eliminated by a modification of practices or procedures, or through the provision of auxiliary aids and services. The determination that a person poses a direct threat cannot be based on stereotypes regarding the disability; it must be based on an individualized assessment relying on current medical evidence about the disability.

Am I Eligible For Tax Deductions?

Possibly. There are three disability-related provisions in the Internal Revenue Code. [1] The Tax Deduction to Remove Architectural and Transportation Barriers to People with Disabilities and Elderly Individuals provides a deduction of up to $15,000 per year for required barrier removal. [2] The Disabled Access Tax Credit is a tax credit available to small businesses [those with gross receipts of less than $1 million or less than 30 employees] in the amount of 50% of their costs for complying with the auxiliary aids and services provisions that are between $250 and $10,250. [3] The Targeted Jobs Tax Credit is available for a portion of the first-year wages of a new employee with a disability.

What Do I Need To Do NOW?

- Inform office staff of the ADA employment [if applicable] and access requirements and prohibitions.
- Eliminate structural and communication barriers in your office.
- Be prepared to negotiate about auxiliary aids and services with patients.
- If you are covered by the ADA employment provisions, review employee job descriptions to ensure that they accurately reflect the actual functions of the current position.

Questions?

AMA members only can call the **American Medical Association toll free at 1-800-AMA-3211.** For technical specifics, call the:

- National Rehabilitation Hospital ADA Health Care Facility Access Project at 1-202-877-1974,
- Americans With Disabilities Act Information Hotline at 1- 202-514-0301.
- Job Accommodation Network for free information about accommodation strategies and methods at 1-800-526-7234, and
- National Institute on Disability and Rehabilitation Research at 202-732-5316.

New Developments at the Connecticut Peer Review Organization

THOMAS P. MEEHAN, M.D., M.P.H.

RECENTLY the Health Care Financing Administration (HCFA) has outlined a new quality improvement philosophy for the Medicare program. This report describes HCFA's new philosophy and the changes that have resulted from its adoption at the Connecticut Peer Review Organization (CPRO). In addition, two national pilot projects conducted in Connecticut, the Medicare Hospital Information Project and the Cooperative Cardiovascular Project, are described. Finally, future plans are outlined and a request for participation is tendered.

The Health Care Quality Improvement Initiative (HCQII) is the name that the HCFA has given to its new philosophy in conducting quality improvement activities.[1] The HCQII emphasizes the analysis of patterns of care and educational feedback rather than the traditional case-by-case review and punitive actions that have previously alienated PROs from physicians and hospitals. It shifts the PROs' focus from identification of concerns in individual cases to efforts aimed at improving the mainstream of medical care. These dramatic changes in goals and methods have emerged from a recognition that HCFA's previous methods were inefficient, incompletely effective, and often viewed as adversarial.[2] As of October 1993 CPRO will begin a new contract period and the HCQII philosophy will become fully operational. By that time, the percentage of Medicare discharges to be reviewed by CPRO using generic quality screens will decrease from the current 20% to approximately 10%.

In the future HCFA hopes to conduct most of its quality evaluations using one of two main data bases, the Uniform Clinical Data Set (UCDS) and the National Claims History (NCH) file. The UCDS is a large clinical data set which HCFA has been developing and refining since 1987. It is generated by the abstraction of clinical data from medical records into computer-readable files by nurse abstractors. Currently there are about 1,000 potential data elements, although in most cases only 200-350 elements are abstracted. When fully implemented, data on 10% of all Medicare discharges will be abstracted into the UCDS. The NCH is an administrative data base which contains billing records for all Medicare beneficiaries' medical encounters, both inpatient and outpatient, physician and nonphysician. In order to develop profiles of existing clinical practice, PROs will make use of patient care algorithms put together by external groups such as the Patient Outcome Research Teams (PORTs) under contract to the Agency for Health Care Policy and Research (AHCPR) and others. The physicians in Connecticut have an opportunity for input into this process as part of CPRO's pilot projects.

New skills will be necessary for the PROs to conduct pattern analysis and educational feedback, eg, expertise in epidemiology, statistics, data base management, and educational feedback to providers. To meet these needs, CPRO has hired several new staff members and restructured its organization. A new position, that of the principal clinical coordinator, has been established to head up the HCQII projects. At each PRO there will be a principal clinical coordinator who will be assisted by one or more part-time associate clinical coordinators. At CPRO, the principal clinical coordinator (the author) was hired on a part-time basis in the spring of 1992. Several associate clinical coordinators were hired recently. CPRO also has a full time biostatistician (John Hennen, Ph.D.) to work with the clinical coordinators in analyzing the data. The medical director (Edward Kamens, M.D.) and the executive director (Marcia Petrillo, M.A.) will continue in their traditional roles, and an associate medical director (Robert McDonald, M.D.) has joined the staff to assist Doctor Kamens.

THOMAS P. MEEHAN, M.D., M.P.H., Principal Clinical Coordinator, Connecticut Peer Review Organization.

CPRO has previewed the HCQII in Connecticut during the past year through its participation in a pilot project called the Medicare Hospital Information Project (MHIP). This pilot was conducted at the Connecticut and Wisconsin PROs from May 1992 through March 1993. The goals of the project were for the two PROs to: 1) work in collaboration with hospitals and physicians in analyzing Medicare hospital mortality data, and 2) to develop effective methods of educational feedback to the physicians and hospitals.[3] In Connecticut an Inter-Hospital Committee (IHC) was formed to work with the CPRO staff on the project. It included representatives from the Connecticut State Medical Society, the Connecticut Hospital Association, Yale University and the University of Connecticut Schools of Medicine, hospitals of various sizes and teaching status, physicians of various specialties, hospital administrators, quality management professionals, nurses, and medical records professionals.

After reviewing CPRO's initial data explorations, the IHC suggested that a chart abstraction study be done for a single high-volume, high-mortality diagnosis in order to confirm the validity of the data base provided by HCFA, and then to evaluate the relative contributions of several potential explanations for the observed variations in mortality rates among the hospitals. Such a data abstraction study was performed on 300 charts of patients (50 charts from each of six hospitals) with a principal diagnosis of acute myocardial infarction (AMI).[4] The results of this study are pending publication, although CPRO has shared the methods and results with the six participating hospitals, as well as five other hospitals in on-site presentations. A survey completed afterward by the 11 hospitals overwhelmingly showed that the hospitals viewed the AMI study as useful, especially because it allowed inter-hospital comparisons of processes of care.

Although the pilot phase of this project has been completed, the inter-hospital committee will continue to function with an expanded membership under the HCQII. We believe that this pilot project has been a successful demonstration of how a PRO can work collaboratively with physicians and hospitals in conducting a practical and useful quality improvement project. Further, based on the interest expressed by hospitals that were not part of the AMI study, it is apparent that the results of this project are of interest to all acute care hospitals. Therefore, we have extended the offer of on-site presentations to all Connecticut hospitals and are considering initiating a similar study using data from all hospitals.

The Cooperative Cardiovascular Project (CCP) is the second pilot conducted by CPRO under the HCQII philosophy. This two-year project began in February 1993 and is being conducted at four PROs: Alabama, Connecticut, Iowa, and Wisconsin. The project's goals are to profile patterns of care received by Medicare patients admitted to acute care hospitals for care of acute myocardial infarction (AMI), percutaneous transluminal coronary angioplasty (PTCA), or coronary artery bypass graft surgery (CABG), and to feed the results back to hospitals and practicing physicians. Actual practice patterns will be analyzed in comparison to patient care algorithms (PCAs) based on guidelines developed by the American College of Cardiology.[5] In order to ensure an adequate sample size for each hospital, data will be abstracted for close to 100% of Medicare patients with these diagnoses or procedures. Algorithm refinement is being guided by input from such interested parties as the American Medical Association, the American Society of Internal Medicine, the American Academy of Family Practice, and many other physician and health-related groups. Consistent with the HCQII philosophy these PCAs will not be used for case-by-case review. Rather, usual practices at each hospital will be summarized as a starting point for discussion. If apparent opportunities for improvement are discovered in the initial analyses then further investigations and interventions will be left to the individual hospitals. Currently, the clinical coordinators at the four participating PROs are working with the HCFA to identify and correct software, data abstraction, and PCA problems. At the same time CPRO is forming three committees of volunteer physicians to assist with data analysis for each of the target conditions. It is hoped that software and PCA revisions can be quickly accomplished and that hospital level data will be available for feedback in the near future.

In addition to the analyses performed in these two pilot projects, CPRO can provide analyses on nonmortality outcomes such as length of stay, admission rates, and utilization rates for various procedures. These analyses can be performed at the hospital level and comparisons made to peer group hospitals which would be specifically defined for the particular comparisons. Other analyses might use geographic areas as the units of analysis, in order to determine if significant regional variations have occurred. If such variations are verified in Connecticut, then subsequent collaborative studies might be designed to investigate potential causes, as well as to determine benchmark rates. Such comparative data will be essential as health care institutions and individual physicians continue striving to improve the quality of health care that they provide. We believe that CPRO is in an ideal position to provide these data and we look forward to working with the physicians and hospitals in this effort.

CPRO is excited to be a part of HCFA's quality improvement effort and pleased with the change in HCFA philosophy evidenced in the HCQII. Although changes in patient outcomes resulting from CPRO's quality improvement activities may come slowly, we hope that through collaborative efforts with hospitals and physicians, improvements in processes of care can be rapidly demonstrated. CPRO extends an offer to all interested parties to become actively involved with the HCQII projects. Readers wishing to participate in the above projects or to receive periodic updates on such activities may contact Carol Guardiano, R.N., M.P.H., Director, Cooperative Cardiovascular Project at CPRO by telephone (632-6348) or by mail (100 Roscommon Drive, Middletown, Connecticut 06457).

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Intuition of a Clinical Sort

HERBERT J. KEATING, III, M.D.

TAKING care of doctors can often teach us how to take better care of other patients, especially when a given doctor-patient is a clinician of the highest excellence. I must tell you about Dr. John. I always looked forward to his visits. As the retired dean of pediatrics, John had seen it all in medicine. He began his practice when physicians were more revered than now, during an era when a baby who was not meant to survive did not. Grief was often eased by a doctor's contribution to a collective certainty that God's will had been done. Dr. John was present for the introduction of medical miracles, like penicillin and heart surgery, at a time when only physicians could command the magical science of it all. Every encounter I had with him taught me something. His lessons were delivered modestly and in parable form; sometimes I didn't appreciate them until much later, when the pressures of office hours were replaced by contemplation. I remember one afternoon especially well.

Dr. John looked dapper as usual, although a recent bout of pneumonia had made him thinner. His white hair was slicked back precisely, and his mustache was well trimmed. I asked him the usual questions about relevant symptoms and then invited him up onto the examination table.

"You don't need me to get completely undressed, Bert, do you?" John asked. His speech was clipped and precise, delivered in a voice made hoarse by decades of talking loudly to parents above the cries of their wailing children.

"Just listen to my heart and lungs," he instructed, and then slowly ascended onto the table, tugging off his tie and unbuttoning his immaculately ironed shirt. "You don't need to poke me anywhere else today, do you?"

Shirtless, leaning forward on the edge of the table, he volunteered his bony chest toward my stethoscope, and I listened. I told him he sounded find and that I didn't want to change any of his medications. I said that I did want to obtain another chest x-ray.

"Fine, fine," he pronounced. As he pushed himself off the table to a standing position he asked, "Did I ever tell you the story about the refrigerator in the nursery?"

Listening for my response, John cocked his right ear forward with his hand, which made a flesh-colored hearing aid more obvious.

"Don't think so, John."

"Damndest thing, really, Bert. I was working at the St. Francis, in their six-bed newborn nursery, and instead of one of the beds they had installed this refrigerator. Right in the middle of the place! Awful thing, but they needed to keep the formula refrigerated, and they had nowhere else to put it.

"This refrigerator made the most horrible racket. Like a bass drum, literally shaking the floor."

As he spoke, John got dressed, and he began to look natty again. He continued the story as if he were entertaining at a dinner party he was hosting.

"One late afternoon I was making rounds at the hospital. I remember this clearly, like it was yesterday. There was this baby girl, and I put my stethoscope on the child's back, and I couldn't hear a thing. I thought it was because of the racket from the icebox, and I stuffed my stethoscope in my pocket and announced to everyone within earshot, in a rather irritated fashion I might add, that I couldn't possibly practice pediatrics with a refrigerator in the room.

"I was full of myself then, Bert. I had done that stint in Boston, you know. I thought they should have jumped up and unplugged that refrigerator.

"Well, later that night I was lying in bed. It was very late, but I got this terrible feeling that something was wrong. I had no idea what, but I knew that I had to examine that baby again. So I got up and got dressed. My

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wife hardly stirred, she was so accustomed to me getting up at all hours. I went back into that nursery, and listened to that baby again. And do you know what I found?

"I found that I couldn't hear the baby's breath sounds all right, but just on the one side. Yes, the refrigerator was on, everything was the same, but I could hear sounds on the other side!

"It wasn't the refrigerator at all!" John said triumphantly. "The baby had a huge diaphragmatic hernia! I got the pediatric surgeon to see her, and he fixed her up right away."

John paused and then said clearly, "You see, Bert, somehow I got called back to that baby. What called me back?"

I was silent.

John added, hastily, "It's happened before, at other times, too. What do you suppose called me back that night, Bert?"

The question seemed too difficult at first, and I didn't answer him. John thought he was making me uncomfortable.

"Don't want to take up any more of your time, son," John said, and then he left me alone.

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DRUG INFORMATION UPDATE: HARTFORD HOSPITAL

Oral Ciprofloxacin, Ofloxacin, and Lomefloxacin as Alternatives to Intravenous Antimicrobial Therapy

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AND GREGORY GOUSEE, MS, RPH.

Introduction

TREATMENT of serious infectious diseases in hospitalized patients has typically been accomplished with intravenous antimicrobial agents. Oral agents have generally been used to complete a course of intravenous therapy. Part of the reason for this lack of faith in oral antimicrobial agents has to do with a lack of highly bioavailable, broad-spectrum oral antibiotics. However, with the availability of several oral fluoroquinolones (ie, ciprofloxacin, ofloxacin, and lomefloxacin) that have favorable pharmacokinetic and microbiologic characteristics, clinicians now have oral antibiotics that can be appropriately utilized as replacements or early streamlining agents for intravenous therapy. (Streamlining is the name given at Hartford Hospital to the process of converting patients from complicated, often expensive antibiotic therapy to equally efficacious simpler and less expensive regimens.)

Absorption Considerations

After oral administration of ciprofloxacin, ofloxacin, or lomefloxacin, most of the ingested drug rapidly (peak concentrations attained within one to two hours) reaches the systemic circulation.[1-10] The absolute bioavailability of ciprofloxacin is 63-78%,[1-3] while for both ofloxacin[4-5] and lomefloxacin[6] it is > 95%. Because of their high bioavailability when administered orally, ciprofloxacin and ofloxacin produce serum-concentration-*vs*-time profiles similar to their intravenous formulations (See Figs. 1,2). Although lomefloxacin is not available in an intravenous formulation, a similar finding would be expected with this drug since virtually the entire administered dose reaches the systemic circulation. Thus, in the treatment of infections due to susceptible organisms, the pharmacokinetics of these agents are such that they could readily replace intravenous antimicrobial therapy.

Antimicrobial Activity

Ciprofloxacin, ofloxacin, and lomefloxacin possess broad antimicrobial activity. Ciprofloxacin, and ofloxacin demonstrate exceptional activity against most gram-negative organisms, including *Pseudomonas aeruginosa, Neisseria meningitidis,* beta-lactamase positive/negative *H. influenzae, N. gonorrhoeae,* and *Moraxella catarrhalis,* and most enterobacteriaceae.[11-13] Ciprofloxacin, however, is more active than ofloxacin against gram-negative bacilli. In particular, the minimum inhibitory concentration (MIC) 90 for ciprofloxacin against *P. aeruginosa* can be four times greater than that of ofloxacin.[12,13] Differences in pharmacokinetic parameters (higher peak concentrations, longer half-life) may compensate for the decreased activity of ofloxacin against gram-negative bacilli, including *Pseudomonas aeruginosa* and, hence, both ciprofloxacin and ofloxacin may be equally effective against all aerobic gram-negative bacteria.

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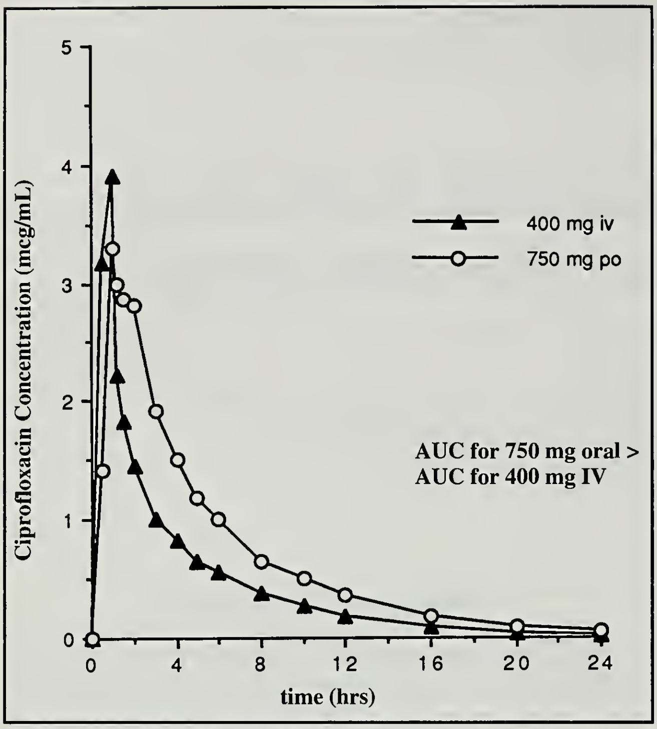

Figure 1.—Mean serum ciprofloxacin concentration after single oral and intravenous (one hour infusion) doses (adapted from Lettieri et al, 1992).

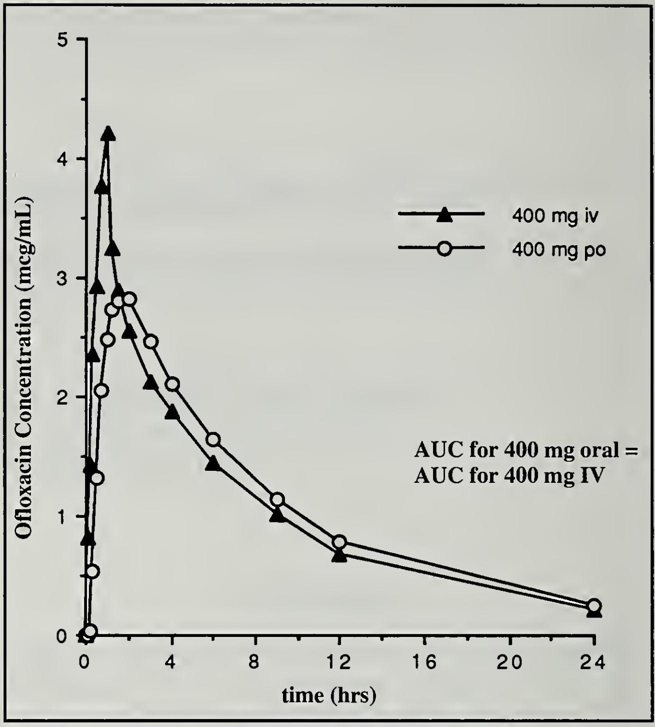

Figure 2.—Mean serum ofloxacin concentrations after single oral and intravenous (one hour infusion) doses (adapted from Yuk et al, 1991).

Lomefloxacin also possesses broad activity against gram-negative organisms. However, this activity is less than that of ciprofloxacin and ofloxacin, particularly for organisms such as *Pseudomonas aeruginosa, Xanthomonas maltophilia, Providentia stuartii, Citrobacte*r sp., and *Acinetobacter* sp.[10,14]

Ciprofloxacin, ofloxacin, and lomefloxacin also possess moderate activity against gram-positive cocci (staphylococci and streptococci),[10,12,13] *Chlamydia trachomatis,*[12,14] and *Mycobacterium tuberculosis.*[15,16] As compared to ciprofloxacin and lomefloxacin, ofloxacin has better activity against *C. trachomatis* and *M. tuberculosis*. Additionally, the higher peaks and longer half-life of ofloxacin provide better coverage of staphylococci and streptococci but this drug should not be considered the primary choice in patients with gram-positive infections. However, the addition of clindamycin with any of these quinolones provides reliable coverage for staphlococci or streptococci.

Clinical Efficacy

Because the oral formulations of ciprofloxacin and ofloxacin were introduced prior to their respective intravenous formulations, there are many clinical trials documenting the efficacy of these oral agents for treatment of various infections. When administered orally, ciprofloxacin and ofloxacin have demonstrated efficacy in the treatment of infections of the lung,[17-20] bone (chronic and acute osteomyelitis),[21-25] skin and soft tissues,[26-28] abdomen (peritonitis in patients receiving chronic ambulatory peritoneal dialysis),[29,30] and the gastrointestinal[31-34] and genitourinary tracts.[35-41] Additionally, treatment of chlamydial urethritis and pelvic inflammatory disease with oral ofloxacin produces cure rates similar to traditional regimens;[42-44] results are less favorable with oral ciprofloxacin.[45,46] It should be noted that in several of the above cited studies, oral treatment with ciprofloxacin or ofloxacin was directly compared to intravenous therapy and found to be at least equally efficacious.[19,22,24,26-28,44]

There are many clinical studies which utilize intravenous-to-oral regimens of ciprofloxacin and ofloxacin to treat various infections including infections of the lung, skin and soft tissue, abdomen, bone, and urinary tract. Additionally, several studies have used these regimens to treat bacteremic patients. In these studies, regimens of intravenous ciprofloxacin or ofloxacin are streamlined to oral regimens of ciprofloxacin and ofloxacin, respectively. When such regimens are compared to alternative intravenous regimens, efficacy is similar.[47-63]

Compared to ciprofloxacin and ofloxacin, there is more limited experience in clinical trials with lomefloxacin. The bulk of the clinical trials have focused on the use of this agent in the treatment of lower respiratory tract infections and urinary tract infections. Compared to other commonly used oral agents, once-daily lomefloxacin has proven efficacious in the treatment of infectious exacerbations of chronic obstructive pulmonary diseases (etiology primarily being gram-negative bacteria)[64,65] and complicated[66] or uncomplicated urinary tract infections.[67]

Although MIC data are crucial in the treatment of systemic infections, when treating urinary tract infections, the more intense activity (lower MICs) of ciprofloxacin and ofloxacin against gram-negative organisms (including *P. aeruginosa*) as compared to lomefloxacin has no clinical relevance. The concentration of all these agents in the urine far exceed their MICs for these bacteria.[68-70] Therefore, they should be effective in the treatment of urinary tract infections due to any gram-negative organism, even those with moderate susceptibility to any of these agents.

Interactions

Divalent cations.—Concomitantly administered divalent cations reduce the absorption of fluoroquinolones by forming nonabsorbable fluoroquinolone-cation complexes in the gastrointestinal tract. Subsequently, the following products have been shown to reduce the bioavailability of fluoroquinolones: antacids containing aluminum, magnesium, or calcium; zinc-containing multivitamins; sucralfate (contains large amounts of aluminum); and iron preparations.[71-32] Since these interactions could compromise antimicrobial therapy,[83] caution should always be observed when a patient is receiving cation-containing products and any fluoroquinolone.

Figure 3

Transitional Quinolone Program: Hartford Hospital, 1993

Infection Site	Suspected Pathogen	Recommencded Intravenous Drug	Recommended Oral Drug
Urine	Enterobacteriaceae *P. Aeruginosa*	•Piperacillin •Ampicillin + Gentamicin	•Ciprofloxacin •Lomefloxacin •Ofloxacin
Lung (community acquired)	*S. Pneumoniae* *H. Influenzae* *M. Catarrhalis* (?atypical)	•Cefotaxime (+/– Erythromycin) •Cefuroxime (+/– Erythromycin)	Cleocin Plus •Ciprofloxacin •Ofloxacin
Lung (hospital acquired)	Staph/strep *H. Influenzae* Enterobacteriaceae *P. Aeruginosa*	•Ceftazidime (+/– Aminoglycoside) •Cleocin + Aztreonam •Piperacillin + Aminoglycoside	Same as above
Abdomen (community acquired)	Enterobacteriaceae *B. Fragilis*	•Cefotetan •Cefotaxime + Flagyl	Flagyl Plus •Ciprofloxacin •Ofloxacin
Pelvic Inflammatory Disease	Enterobacteriaceae *B. Fragilis* Chlamydia	•Same as above + Doxycycline	Flagyl Plus •Ofloxacin
Abdomen (hospital acquired)	Enterobacteriaceae *B. Fragilis* Staph/strep	•Piperacillin + Aminoglycoside •Timentin + Aminoglycoside	Augmentin Plus •Ciprofloxacin •Ofloxacin
Skin (Fetid Foot)	Enterobacteriaceae *B. Fragilis* Staph/strep *P. Aeruginosa*	Same as above	Cleocin Plus •Ciprofloxacin •Ofloxacin

Table 1.

Drug/Dosage Form	Dose	Daily Cost*
Ampicillin IV	1 g QID	$ 7.35
Aztreonam IV	1 g TID	$36.66
Cefotaxime IV	1 g BID - TID	$17.65-26.04
Cefotetan IV	2 g BID	$37.03
Ceftazidime IV	1 g TID	$35.61
Cefuroxime IV	750 mg TID	$19.50
Cleocin IV	600 mg TID	$10.93
Doxycycline IV	100 mg BID	$ 5.94
Erythromycin IV	500 mg QID	$ 9.14
Gentamicin IV	7 mg/kg	$ 4.30
Metronidazole IV/Oral	500 mg BID	$ 4.98/0.14
Piperacillin IV	3 g TID	$31.47
Timentin IV	3.1 g Q6H	$47.27
Augmentin Oral	500 mg TID	$ 5.46
Ciprofloxacin Oral	250-750 mg BID	$ 4.08-8.00
Cleocin Oral	300 mg BID	$ 2.52
Lomefloxacin Oral	400 mg QD	$ 4.74
Ofloxacin Oral	200-400 mg BID	$ 4.04-5.06

*Based on Hartford Hospital acquisition cost for drug and supplies of preparation and administration.

Despite the significance of the cation-fluoroquinolone interaction, there are ways that patients can receive these products without compromising fluoroquinolone absorption. The effects of this interaction can be reduced by staggered dosing of the fluoroquinolone and the cation-containing product. Administration of antacids or sulcralfate two to four hours after the fluoroquinolone will virtually eliminate the interaction.[72,75,79,81,84-85] Utilizing such dosing schemes with iron preparations and cation-containing multivitamins should produce similar results. However, this interaction with these two products is logistically less concerning since iron and multivitamins are usually dosed infrequently.

Ursodiol (Actigall®)—This product has been reported to reduce ciprofloxacin serum concentrations by a mechanism which remains unclear (unpublished data, Hartford Hospital).

Food.—Administration of ciprofloxacin, ofloxacin, and lomefloxacin with food (standard meals and high-fat meals) may slightly delay the absorption of these agents. However, the extent of absorption is not affected.[73,86-88] Although some authors have also demonstrated minimal effects of concomitant ingestion of milk or high-calcium meals,[86,87] others have reported reduced absorption with administration of milk or yogurt.[89] Therefore, although standard meals (relatively low in calcium) can be ingested with fluoroquinolone administration, it would be prudent to avoid high-calcium products such as milk or yogurt.

Administration of fluoroquinolones via a naso-gastric (NG) tube in the presence of enteral feedings has also been investigated. When ciprofloxacin is crushed and administered with Osmolite, no significant changes in absorption are observed even though this enteral supplement contains divalent cations (21.1 mg magnesium/100mL). Therefore, even in patients receiving feedings via an NG tube, it is possible to use the enteral route for administration of agents such as oral ciprofloxacin without compromising drug absorption.[90]

Theophylline.—Ciprofloxacin increases theophylline concentrations by inhibiting its hepatic metabolism.[91] The significance of this interaction requires close monitoring of theophylline concentrations in patients receiving these medications concomitantly. Unlike ciprofloxacin, ofloxacin and lomefloxacin do not cause clinically significant changes in theophylline metabolism.[91,92]

Safety and Tolerability

The oral fluoroquinolones are generally well tolerated. Adverse effects are infrequent. When they do occur, they are transient and rarely require discontinuation of therapy. Use of these agents in the oral form also eliminates the local infusion site reactions which can occur in patients treated with intravenous antimicrobials. Gastrointestinal complaints (nausea, vomiting, diarrhea, abdominal discomfort) are the most commonly reported adverse events with oral ciprofloxacin, ofloxacin, and lomefloxacin, occurring in approximately 2-5% of patients. Reactions of the central nervous system (dizziness, headache, insomnia) and skin (erythema, pruritus, urticaria, rash, photo-sensitivity) are the next most frequent. These adverse reactions occur in less than 2% of patients.[93-95]

Place in Therapy

At Hartford Hospital, we have developed a protocol for use of oral ciprofloxacin, ofloxacin, and lomefloxacin as early streamlining alternatives to intravenous therapy (Fig. 3). In patients with normal renal function doses of these agents are as follows: ciprofloxacin, 250mg-750mg BID; ofloxacin 200-400mg BID; lomefloxacin 400mg QD. In patients with creatinine clearances of 30-50 mL/min, doses must be decreased or dose intervals extended.[96-98]

Cost

The daily cost of therapy for suggested antibiotic regimens is listed in Table 1. As would be expected, the cost of regimens including oral agents are significantly less than those containing only intravenous antimicrobials. Therefore, use of these oral agents as initial therapy or for early streamlining from intravenous therapy will result in significant cost savings over long-term intravenous therapy. The published experience with oral ciprofloxacin supports the cost-effectiveness of appropriately used oral fluoroquinolones.[99-104] However, to maximize cost savings, oral therapy with ciprofloxacin, ofloxacin, and lomefloxacin should be used as alternatives to intravenous therapy and not as alternatives to less expensive oral therapies (ie, amoxicillin, ampicillin, trimethoprim/sulfamethoxazole.

Summary

Ciprofloxacin, ofloxacin, and lomefloxacin are oral fluoroquinolones with ideal characteristics for oral antimicrobial therapy. These agents provide 1) appropriate and reliable serum concentrations, 2) broad antimicrobial activity, 3) proven efficacy in the treatment of serious infections, and 4) good tolerability. Although cations decrease the absorption of these drugs, there are proven means of avoiding these interactions. Therefore, these agents could easily be utilized as alternatives to prolonged intravenous treatment of many infectious diseases in patients who do not have conditions which impair drug absorption.

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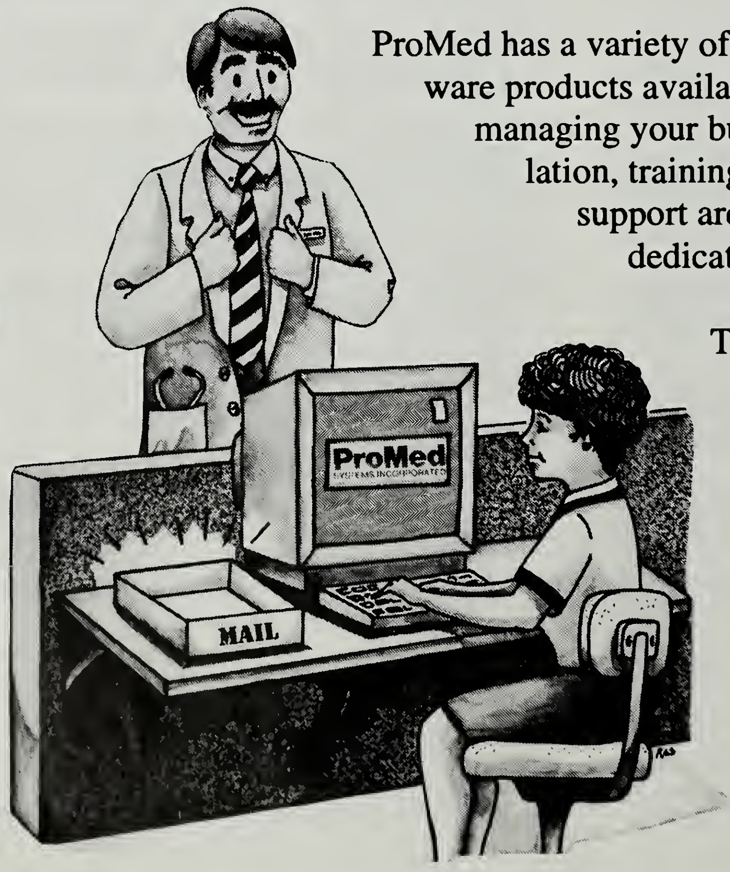

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Editorials

Response to Dr. Arthur's Koffler's Case Report

In this issue of *Connecticut Medicine* Dr. Arthur Koffler's case report of the 96-year-old woman with atrial fibrillation who suffered a stroke while leaving the hospital deserves comment, particularly in view of the recent Special Issue on geriatrics (May 1993). Three points are worthy of comment:

1) Dr. Koffler felt that this patient, even at the age of 96 and with a recent past history of rectal bleeding, was a candidate for preventive anticoagulaion in spite of the risk for recurrent bleeding. His personal knowledge of her and a refreshing lack of ageism led him down the correct therapeutic pathway, but not to the preferred anticoagulant choice.

2) The article cited by Dr. Koffler in the 1991 literature noted stroke reduction among younger patients with nonvalvular atrial fibrillation (NVAF) receiving aspirin;[1] studies before and since suggest that aspirin confers much less if any benefit on older patients, particularly those with additional risks for strokes.[2] Coumadin, the anticoagulant of choice, reduces the risk of stroke in NVAF patients by as much as 70%. The older the patient with NVAF, the greater is the risk of stroke and the more effective is coumadin. Low-dose coumadin works (prothrombin time: 1.2 times control), and although the risk of minor bleeding increases, there is no greater risk of major bleeding; age did not increase bleeding risks in elderly patients.

3) It is pertinent that the distribution of the paralysis in this case indicates involvement of the basilar artery system, making an embolus from a cardiac source highly unlikely. This in no way diminishes the effectiveness of low-dose coumadin in reducing the NVAF stroke recurrence rate. Coumadin reduces thrombotic as well as embolic strokes; the mechanism is not yet clear.

Dr. Koffler's steps to treat demonstrate a cultivated respect for the quality of this elder patient's remaining years; he is a fine model for his colleagues, young and old.

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The following guest editorial entitled *Managed Competition,* was written as a position paper for Medical Delivery Systems, Inc. (a subsidiary of Hartford Country Medical Association (HCMA)) and mailed to all HCMA members.

Managed Competition

The Clinton Administration will soon release its proposal for health care reform that is expected to include some form of "managed competition." This comprehensive restructuring of the health care delivery system in the United States will influence the practice of medicine by each of us for the balance of our careers.

This paper is a call to action. All physicians need to be involved in the coming debate on the new health care delivery system. This is not a call to defend the old ways or to obstruct reform proposals. This is simply a call for each of us to become involved in the national debate on health care reform. In the coming months, issues will be raised and discussed that will have a significant impact on your future.

We believe it is in the long-term interests of all physicians to assume greater responsibility for our collective destiny. In our view, physicians should be engineers directing the train of health care reform rather than passengers along for the ride or captives who are tied to the tracks and about to be run over.

Under managed competition, the principal purchasers of health care will be the government, large employers and health insurance purchasing cooperatives (HIPCs) formed by individuals, and small employers. In short, there will be fewer, albeit larger, purchasers of health care services. On the provider side, physicians, hospitals and insurers will form partnerships such as accountable health partnerships (AHPs) that will compete for the health care business on the basis of quality and price. We therefore expect managed care plans to intensify their efforts to select physicians on the basis of measures of quality and efficiency. Moreover, as pressures mount on AHPs to reduce prices, the fees charged by physicians and hospitals will be squeezed.

As managed competition looms on the horizon, we are witnessing the proliferation of physician-hospital organizations (PHOs) throughout Hartford County. This is the first step in the formation of alliances among physicians, hospitals, and insurance companies into the integrated delivery systems that will necessarily occur under managed competition. Since a basic benefit package will be prescribed by government, we expect increased competition among these delivery systems on the basis of quality and price.

Physicians must play a key role in the organization and management of PHOs and AHPs. Physicians must understand, however, that although hospitals, insurers, or managed care plans may be their allies in joint ventures, those allies have their own agendas and will be seeking first and foremost to promote their own self-interests. At times, these interests will conflict with those of the other joint venture partners, including physicians. This is not unusual. Any partnership includes elements of internal competition as different partners act in their own self-interests even while cooperating to serve the common interests of the entire partnership.

One central issue on the provider side is: who will control the health care delivery system in the future? Each provider group will be looking to maximize the control that it exercises over the delivery of health care. Physicians should not lose sight of the control issue as PHOs and other joint ventures are formed in anticipation of managed competition.

A health care reform proposal that includes global budgeting will clearly encourage capitation arrangements at all levels of the delivery system. There may be capitation at the PHO level, the IPA level, and/or the physician level. Under capitation, physicians will be forced to assume increased actuarial risks. While physicians have been traditionally reluctant to assume such risks, health care reform may eliminate this choice. Even if global budgeting is not part of the health care reform package, we expect the number of capitation arrangements to increase. Under these circumstances, physicians must understand the risks they are being asked to assume and methods for minimizing such risks.

For example, if a PHO is paid a global fee covering hospital and physician services, how much are the hospital and physicians paid for their services? How are risks allocated between the parties? If utilization is less than forecasted, how are the rewards distributed? Finally, and most importantly, how are the answers to the foregoing questions decided, that is, who ultimately controls the PHO?

We are concerned that physicians are being lulled into a false sense of security by entering into joint ventures with hospitals and/or insurers and assuming that their interests will be respected, defended, and advanced by their joint venture partners. Each of these groups has its own distinct interests. This point was recently made by Uwe E. Reinhardt in an article that appeared in the 7 April 1993 edition of *The Journal of the American Medical Association* in which he described the new health care system as involving a "fight" among providers, care managers, and hospitals for the decreasing revenue being funneled into the health care system. Dr. Reinhardt said:

That fight will include a tenacious wrestling match between organized medicine and the hospital industry. The former naturally would have physicians as chief organizers of the integrated health plans under managed competition, allowing plans to pit hospitals against one another in the fight for inpatient business. The hospital industry would put hospitals at the center of the plans, allowing them to pit physicians against one another for affiliation with the plans. This turf war appears to be on even as we speak although waged, ever so politely, in guarded code. Physicians appear to be doing nicely in the early skirmishes, but the battle is by no means over.

Physicians must not ignore the long-term designs of hospitals when forming PHOs. Based on Dr. Reinhardt's comments, we expect that there will be some hospitals and PHOs looking to have physicians become hospital employees subject to the hospital's direction and control.

Although managed competition will necessarily result in fewer and larger purchasers of health care as well as fewer and larger health care delivery systems, we believe it is far too early for physicians to identify which health care delivery systems will survive and flourish as "winners" in the new health care reform era. For that reason, we believe that the long-term interests of physicians are best served by the "level playing field" principle adopted by Medical Delivery Systems, Inc. (MDS). This principle means that MDS is willing to work with managed care companies contemplating entry into the Hartford market provided that such entities are willing to allow participation by all qualified physicians and hospitals in Hartford County. This principle is intended to provide equal opportunity to all physicians in Hartford County to join managed care plans and to preserve freedom of choice for patients in selecting physicians. Furthermore, in the context of managed competition, we believe that the level playing field principle allows physicians to diversify their alliances with managed care plans thereby avoiding too much reliance on one particular managed care plan. In our view, economic dependence on one managed care plan invites too much control by that plan over the physician's practice. Furthermore, that particular managed care plan might ultimately turn out to be a "loser" in the new health care environment with potentially disastrous consequences for the physicians tied too closely to that plan. As investment counselors have traditionally cautioned, diversification is the best strategy to pursue in times of uncertainty.

The Hartford County Medical Association and MDS will continue to seek to advance the interests of physicians in the forthcoming health care debate. However, as the pace of reform quickens, each physician in Hartford County needs to become actively involved in this process.

Physicians cannot rely on any other group to do their bidding for them. Hospitals, insurers, and managed care plans all have their own agendas and economic interests under the new health care delivery system. While they may form cooperative joint ventures with physicians, the "turf war" identified by Dr. Reinhardt is real and the stakes are high.

MDS's mission is to serve the collective interests of all physicians in Hartford County and not the special interests of any particular hospital or group of physicians. MDS represents those collective interests in dealings with CIGNA Healthplan and Connecticut HealthPlan. MDS will continue to work vigorously to advance the interests of Hartford County physicians with other managed care plans, including Physicians Health Services, Inc. (PHS). MDS is actively pursuing negotiation of a contract with PHS that will be open to all physicians in Hartford County in accordance with the "level playing field" principle.

By providing recruitment, credentialing and utilization review/quality management services to managed care plans over the past several years, MDS has accumulated the experience and expertise needed to represent physicians effectively in the managed care context. In our view, this experience and expertise makes MDS best able to represent the interests of all physicians in dealing with PHS to structure a managed care plan that provides cost-effective quality care. And, if and when managed competition is implemented, this experience and expertise will be used by MDS to work to preserve the leadership role of physicians in the health care delivery system.

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Guest Editorial

A Shortage of Nurses or a Surplus of People Called Nurses?

Trailing only the national debt, the trade deficit, and the stuporous economy, the nation's best publicized and most worrisome lack may well be its deepening nursing shortage.

The scapegoat, tediously and traditionally remains "The Doctor." However, contrary to popular assumption, doctors, for a long time, have had barely anything to do with nurses' basic education, licensure, hospital employment, or assignment. That was taken over quite a while ago by other nurses who determined that they could do it better. Doctors have substantially more to do with the advanced training of the more ambitious and talented nurse who seeks a higher level of competence in some special area, such as the operating, delivery, or emergency suites, or postanesthesia, or critical care. Those with high ability and motivation are encouraged and usually taught by doctors, not scorned and rejected by them, as is often intimated. Specialty certification following this training is widely available to qualified applicants in many fields, and provides a truly meaningful testimonial in a blizzard of diplomas of often meager significance.

Primary nursing education has for some time progressively deemphasized bedside care, the public's chief and traditional concern as well as its legitimate expectation. Contemporary nursing school curricula now mirror the nursing establishment's notions of what a nurse should be and do, not the public's or the medical profession's. The traditional three-year post-high school, hands-on, vocational training program leading to an R.N. has been virtually totally supplanted by a four-year, hands-off, academic training program yielding a B.S. in nursing. The latter comprises mostly didactic courses, including a smattering of medical subjects at an introductory level. "Nursing Arts," the core of the old program, has been relegated to a minor, almost demeaning, informational, historical role only. The new nursing school graduate is now inadequately prepared to provide "entry level" bedside care, but is fully ready for staff meetings, planning committees, assessment strategies, protocol formulations, and a whole host of nonclinical administrative activities, increasingly labeled in commercial, business jargon. Nurse titles have paralleled this; words like "director," "manager," and "vice-president" have surfaced in profusion and symbolized further flight from the historic images of Florence Nightingale, Clara Barton, and Edith Cavell.

The result of this change of direction is not so much a shortage of nurses as a surplus of people called nurses, who are overtrained in areas where little need exists, and undertrained or uninterested in areas where they are desperately needed.

The ironic consequence is the anomaly of the most critical direct bedside nursing service being delivered by those at the low end of their hierarchy totem pole. A shrinking group of dedicated and devoted aides, practical nurses, struggling junior graduate nurses, and a hard core of R.N. "old timers," are overworked, underpaid, underappreciated, and disdained by the new elite.

The less critical and least stressful clerical, administrative, and managerial functions are provided by the higher-ranked credential holders, a large and swelling cadre of supervisory personnel sporting fancy titles, long white coats with embroidered identification, clutching clipboards, and still nominally nurses. But they are no longer functionally nurses, rushing to meetings or sequestered in conferences, mostly talking only to each other, engulfed in clouds of paper, insulated from real, live patients, and never getting their hands dirty. Meanwhile, the patient-call monitors at the nursing stations are flashing and beeping like game boards at a video arcade and going unanswered.

Enormous amounts of time and energy are expended by nurses on duplicate entry of clinical and clerical data already on record, and formulating separate goals-and-procedures protocols. It is as though nursing were an unrelated, independent activity paralleling, or even diverging from, medical care, rather than simply another critical support service along with laboratories, radiology, cardiology, pulmonary care, physiotherapy, dietary, social service, and all the other key elements that comprise hospitals and the health care delivery system. One management plan per patient, directed by the responsible primary physician in which all these essential elements participate, should be sufficient. Excessive, burdensome, and distracting paper work, externally imposed on all health industry workers, is the basis of very real, reasonable, and serious complaint. Some nurses, however, with unerring bureaucratic instinct, are passionate in creating still more of it on their own, and seem to revel in it.

Lack of respect is another frequent complaint. Disrespect toward anyone is never excusable, but respect is no more automatic for nurses than for anyone else, including doctors, lawyers, and Indian chiefs. Competence, intelligence, judgment, reliability, diligence, motivation, and every other definable attribute are as readily recognized, appreciated, acknowledged, and rewarded in a nurse as in any other worker. More simply, respect is earned. Many medical technologists have substantially more rigorous education and certification requirements than nurses, but they are not heard in noisy public clamor demanding status. They seem content to allow their competence to speak for itself without indulging in shrill stridency.

If nursing's leadership would reflect on what community service its practitioners are expected to provide and why its craft exists, and concentrate its efforts in that direction, patients would be the immediate beneficiaries. Instead of trumpeting pretentious pseudo-professionalisms and flaunting academic figments, a good start would be supporting, instead of thwarting, physician efforts at developing innovative, alternative ways of providing needed bedside care. By stopping dissipating their energies in fueling an obsessional preoccupation and infatuation with credentials, prestige, and turf, nurses would have less difficulty gaining the respect and recognition some feel elude them, as well as earning their own self-respect, job satisfaction, and proper remuneration.

Creating an occupational category no one needs while neglecting the necessary is like laboriously developing an antibiotic that treats no known disease. It is a squandering of people, money, and health, and this society cannot afford any of it.

James Lee Eliasoph, M.D.

Darien

50 Years Ago

From *The Connecticut State Medical Journal*

June 1943

Resistance to Change as a Contribution to Medical Progress

LOGAN CLENDENING, M.D., Kansas City, Missouri

The Author. *Professor of Clinical Medicine, University of Kansas Medical School*

To say that I am proud of the honor which you have done me to invite me to address you on this occasion would be to put it mildly; but I am also filled with a kind of wonder and astonishment to think that you should select the son of a state which had never been heard of when your State Medical Society was founded, from a land where no pioneer from New England had ever penetrated, where even yet I fear many of your citizens regard us as little better than barbarians slowly groping for the light. It is one of the sayings of my native state that "I'm from Missouri: show me;" a sort of rugged skepticism and reluctance to give one's easy assent to any new-fangled proposition. I was once talking to a lady from Boston who inquired my ordinary habitat and I said, "Madame, I am from Missouri. Does that convey anything to you?" and she replied with a frigidity which is traditionally associated with Boston pronouncements, "No, I'm afraid it does not."

Of course, I am aware that Connecticut and Missouri have a certain spiritual association in the history of medicine. Your most distinguished son, in fact the most distinguished son of medical science in the United States, William Beaumont, born not far from here in Lebanon, Connecticut, made his way westward and after the unique and remarkable experience which fell to his lot and which resulted in one of the major discoveries in physiology, finally elected to settle and practice in St. Louis, Missouri, where he lived out a full and honorable career and where he died and where he is buried. So from the tablet commemorating his birth at Lebanon to his graveyard in St. Louis, there is a spiritual link which unites our medical traditions.

During his period of practice in St. Louis Dr. Beaumont had another fistulous case which did not redound to his credit quite as much as the case of the "fistulous old Alexis." It concerned a Mary Dugan, who had a fluctuating swelling in the right inguinal region which was opened by Dr. Andreon, resulting in the discharge of pus, some fetid gas, and later some fecal matter. The abscess in the course of a few days "degenerated into a foul ill-conditioned ulcer." Dr. Beaumont was then called in consultation and trimmed the mortified portions of the edges of the ulcer away and later advised the patient to go to her home in the country for recuperation. She remained away four years and returned with the fistula still open and sued Drs. Andreon and Beaumont on the grounds that the original trouble had been a hernia. The defendants declared that the disease was typho-enteritis and after a lively trial the jury returned a verdict in their favor. This, however, led to a spirited exchange of pamphlets between members of the profession, in some of which Dr. Beaumont's penchant for creating fistulas was alluded to in no very flattering terms.

Another of his professional experiences which brought reminders of his famous case was that of a Mr. Davis, editor of the newspaper, *Argus*, who was attacked by a Mr. Darnes, who beat him over the head with a cane. Dr. Beaumont trephined the skull and removed spiculae of bone. Mr. Davis died a few days later and at the trial of Mr. Darnes, the defense counsel maintained that it was not the blow on the head which killed Mr. Davis, but the operation, and maintained that the operation was only another of Dr. Beaumont's experiments, and that he was

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From the *Connecticut State Medical Journal*, June 1943.

An address before the Connecticut State Medical Society at its Sesquicentennial Meeting, June 4, 1942.

"boring for symptoms" intending to study Mr. Davis' brain, if he recovered, as he had studied St. Martin's stomach.

One hesitates between tagging these experiences with the "What a heavy burden is a name that becomes famous too soon" of Voltaire, or with the "Fame due to the accomplishments of the mind never perishes" of Propertius.

Our Missouri State Medical Society was founded in 1850, three years before Dr. Beaumont's death, and his association with it was not close. But it was the outcome of the organization and evolution of other medical societies, the earliest being the Medical Society of Missouri, afterwards the St. Louis Medical Society—1836. Dr. Beaumont in 1840 was elected president of the Society, and on several occasions expressed his appreciation of the services which such organizations perform "for the good of the race."

It is natural and indeed inevitable on an occasion of this kind to think of the many changes that have occurred in the science and practice of medicine and in the practices of life between now and the time when the founding fathers met in 1792. Undoubtedly the prime inspiration of this organization was to discuss the new and changing aspects of science and of practice and to benefit from a discussion and a pooling of the views of the members on these subjects. During no period of the world's history, if we are to believe such social historians as Lewis Browne and James Burnham, have changes come so rapidly as between the years which cover the existence of this society, for it was in 1776 that James Watt first got a steam engine to work and the industrialization of this world uprooted man's habits.

But in order to justify the title of my address, I feel it is legitimate to point out that part of the duties of any such organization is to put a brake upon those who would make progress too rapidly, and on those who would make false progress. When the great scientific societies of the Seventeenth Century were founded, there was hardly any such thing as science recognized or taught in the universities, and very little medicine. These societies contributed a great benefaction on civilization by setting up standards of exact thinking and by throwing into disrepute the extravagant claims of quacks, soothsayers, prophets, astrologers—all of whom could, and did, appeal to the public in the name of science and progress. Nor, I submit, should that spirit fade in the least from the debates of our modern scientific and medical organizations.

I have no doubt that in those deliberations which have been held regularly and continuously for 150 years, one group of men enthusiastically hailed a new day and another consistently threw cold water on the rising sun. And I have no doubt that both groups benefited from this exchange of views or the organization would not have endured. Today those changes have accelerated and I think we all find ourselves in a position which is continuously difficult and uncomfortable.

John Stuart Mill said, "The future of mankind will be greatly imperiled if great questions are left to be fought out between ignorant change and ignorant opposition to change." This is perhaps just another way of quoting the epigrammatic author of "The Essay on Criticisms:"

"Be not the first by whom the new is tried
Nor yet the last to lay the old aside."

I do not know whether all of you of my age have the same feeling, but I confess it seems to belong particularly to my generation: the internal sense of divided counsel in the face of a new idea. My first instinct is to say, "I have seen so many of these gadgets come and go; I have heard so many promises made and broken; I have seen so many of these fond hopes bloom and fade that it will take a good deal of persuasion to make me believe that this method of treatment or method of diagnosis has any great virtue."

And then a still, small voice says, "Better not express that idea. They will put you down as an old fogey.... Be one of the boys. Join in the enthusiasm. Place yourself in the vanguard of progress. Don't let anybody suggest that you are opposed to anything."

It is these two opposing inner counsels that I wish to discuss with you this afternoon.

Of course, it is not always change that confronts us though it may appear to be. The story is told of the Hollywood producer who rose rapidly to dizzy heights in the social scale and who was being shown around one of the palatial and spanking new estates which adorn the California countryside when the party came upon a sun dial. It was explained to the newly created magnate that this told the time a day by the shadow cast by the sun and he exclaimed, "What will they think of next!"

The patriarchial physician in George Bernard Shaw's "The Doctor's Dilemma" complimented Mr. Cutler Walpole, the surgeon, on his new invention by saying, "I knew that instrument fifty years ago. It was called a cabinet maker's jimmy then."

There is also the story of the medical Rip Van Winkle who went to sleep for twenty years and who woke up just the other day. He thought of going back into practice with misgivings because he said, "All my methods will be outdated. Just as I went to sleep they were making fun of my mercurochrome injections for septicemia and my idea that people should eat green and yellow vegetables throughout the winter." And lo and behold, when he got to the hospital he found that he was in the vanguard of progress because all of his colleagues were giving the sulfonamide drugs for septicemia and the vitamins to prevent deficiency diseases in the winter.

In one of Dr. Conan Doyle's delightful clinical books of medical fiction, one of the few books that actually smells of phenol, there is a story called "Behind the Times." It describes a community which had long been dominated by a kindly old gentleman of wide clinical experience. Into this village there arrived two young men straight from the modern hospitals of London. They were thoroughly imbued with all of the spirit of modern medicine and progress. The old doctor was very courteous to them but they used to make considerable sport of his antiquated ideas when they got together. Then one day an epidemic of influenza laid the town waste and one evening young Dr. A found himself undoubtedly toxic, with a temperature of 104. He thought he should have medical advice, but when he got to thinking of his contemporary, young Dr. B, with his cold, impersonal, scientific manner, his eyes which regarded a patient as an experimental animal, he decided he would have the old doctor instead in spite of his outmoded calomel and his opposition to modern methods of diagnosis. So he sent for the old doctor and the message came back that the old doctor would come and see Doctor A as soon as he had finished visiting Dr. B who was also down with influenza.

In our day, too, we are exposed to a double confusion. Not only do new technical discoveries crowd upon us weekly, daily, yea even hourly. Not only do our old hands and minds have to learn to handle new instruments and to interpret strange, unfamiliar hieroglyphics and graphs and complicated mathematical reports, but also the circumstances of our social life, of the conditions of practice, of our relation to our patients is being changed for us and we hear that the physician is not worthy of his hire, of group practice, of hospital insurance plans, of part-pay institutions, of merging ourselves with the great Nirvana of the State and wearing a livery and huzzaing at every evidence of totalitarianism. We are in little danger of being bothered by the Methodist minister who was new to his flock and terribly conscious of his responsibilities and who, on his first appearance prayed, "Oh, Lord! Give me strength. God, grant me strength. Give me strength, O Lord." Whereupon one deacon spoke up and said, "Pastor, you don't need strength. What you need is ideas."

I don't know whether to blame everything on the New Deal, but with all its faults, and as Macaulay would say, they are neither few nor small, nobody can say that the New Deal lacks ideas. Nor those adherents of it who are among medical practitioners. One sometimes feels as their idea of a calm, desirable social state is like an eternal game of musical chairs: you no sooner get calmly seated than someone shouts, "Start the music. Everybody up. Run around some more. We're on the verge of a great change."

Now I am sure we are all of us acutely conscious of a personal responsibility in all this. We can't evade it. We can't ignore it. We can't shrug it off. We can't say, "They're just wild young theorists. Pay no attention to them." They produce too many concrete realities to allow of that attitude.

For me too—I know not how it is with you— but with me, I am conscious of a sense of guilt no matter what I decide. I want to march in the vanguard of progress. I want to sing the songs that inspirit us; I want to march prospering; I want the morning sun in my face, the wind in my hair and my feet ringing on the stones of the highest mountain top. But I don't want to make a fool of myself. I want to go forward, not around the corner, or in a circle or up a *cul de sac. So* let me put in a few words at first about the desirability of opposition to change.

Opposition to change has always had a great preservative effect on any human community. I can think of at least five mighty empires—Athens, Persia, Macedonia, Islam and in the nineteenth century, Turkey, (and I think I will soon he able to add Japan, Prussia and Italy) who went to ruin because they decided to expand, progress, do the new and startling thing instead of being content with a lesser but still substantial and happy way of life. I can take you to the Ozark Mountains near my home where a whole community of people racially nearly related to us have preserved this racial and social integrity by resisting all modern social reform such as the income tax, prohibition, night clubs, the rhumba and french phones, as well as being very suspicious of the steam engine, the motor car and the telegraph and the phonograph; who still speak Elizabethan English, believe in witchcraft, folk medicine, harvest dances and the personal devil and to all appearances are just as happy as you are in this more advanced community.

This may be citing too extreme an example, but wouldn't it have been a wonderful thing for humanity if when gunpowder was invented the Duke of Brunswick, to whom legend says the first sample was submitted, had said, "Take the inventor out and tie him to a stake and blow him up with his own powder and the formula along with him!" Wouldn't the financiers of the world really have had a chance to be heroes for once if they had refused to finance the Wright Brothers' airplane? Wouldn't it have been wonderful if that nameless epigrammatist who, when he first saw the telephone or the radio said something like "What hath God wrought?" had said instead, "Pull the darned thing off the wall and throw it in the ash can." I think it would.

To adjust ourselves to change in our scientific methods, we are all doing our tired best. On the whole we agree, I suppose, that these changes are to the good. They are intellectually exciting. We may have some reservations. When our honored founders of this society began practice here a century and a half ago, about the only cavity of the body that they habitually looked into was the mouth. Now there is no opening in the divine framework so small, no duct so devious, no electric globe too tiny but what it can be devised to investigate the dark and dismal caverns of the deep. Very, very interesting, but sometimes I suggest the investigators find more than their mental capacities are capable of coping with. Sometimes I feel that some of these secrets are too much for the brain of a mere gastrologist or proctologist or broncho-laryngologist and that they find things that are better let alone, but that they haven't restraint enough! hence the patient suffers in mind, body and estate. Perhaps the most continuous wonder I have is not that so many people get well on modern treatment but that so many people survive modern treatment.

There are phases of this that are rather sore points with me. When I was an interne at the Augustana Hospital, Chicago, in 1907, the opsonic index had just been broached. Dr. A. J. Ochsner, our surgical chief, had heard one of his colleagues say that no patient should be operated unless his opsonic index was just right. I was the drab plodder set to taking the opsonic index on every patient every four hours. I did it, and little else, for six months. So far as I remember, Dr. Ochsner never postponed or changed an operation schedule on account of the opsonic index. He used to come in and look at the slides in a detached way every once in a while. Then it all stopped. I suppose I am the only human being living in North America who has ever personally done two thousand opsonic indices. And I resent the time I wasted on that very much.

Another illustration concerns a book on treatment I wrote about fifteen years ago. It has gone through seven editions now, which is a compliment to the book, but it has also given me an insight into the vagaries of the scientific evaluation of remedies. I hear, for instance, of a wonderful remedy that has been tried out extensively and successfully in the Bayou Clinic and the Rothschild Center and I get about nineteen reprints on the subject and I study them and cut out all the prepositional phrases such as "although it has been several times suggested" and all the unnecessary adjectives and recast the sentences and boil them all down to two paragraphs. Then what happens? The book comes out and the reviewer of a very elite medical journal says, "We find a very inadequate reference to the treatment of osteostrichosis by synendrechnikon" while the reviewer of an equally enlightened publication says, "Disproportionate space has been allotted to the now discredited synendrechnikon treatment of osteostrichosis." When the next edition is ready, I ask some member of the Bayou Clinic about it and he says they gave it up about the time my previous edition was published. Well, of course, experience is the touchstone of all these things and we try to get as much experience as we can. But let me remind you that in the first aphorism of our profession it says that "experience is fallacious."

Of course I realize—and here I come over to argue for the modernists—that the worst faults are committed by those who stick to a system long after the fundamental features of that system have been disproved. That was a pathetic saying of Nathaniel Chapman's, who said about his book on Materia Medica that at least he was sure his chapter on emetics would endure through many generations. Who in this audience has ever read a chapter on emetics?

Two curious anachronisms of this sort are the homeopathists and the osteopaths. The homeopathists have almost vanished now, but a few shy specimens can be found in the country lanes. They lasted a long time. And we must remember that their founder was a perfectly regular member of the medical fraternity with a classical eighteenth century education whose "system" was simply one of a series of medical systems which included those of van Helmont, Cullen and Baglivus. Indeed Rokitansky! And medicine might have taken the wrong turning, according to an eminent historian, and gone down the road of homeopathy if it hadn't been that an Austrian, Auenbrugger, and a Frenchman, Laennec, emphasized the importance, as my friend Dr. William Dock says, of the removal of the shirt. When medical men made the patient remove his shirt and looked at him insead of looking at the outside of the coat or the bodice and letting the patient tell the doctor what was the matter, homeopathy shrivelled up.

Osteopathy still flourishes rather aboundingly in my benighted part of the country. In their schools they refuse to teach pharmacology, but the practitioners bootleg their knowledge of it from pharmacists and detail salesmen and they dispense as blithely and abundantly as the most ardent polypharmacist. But the canker which is killing osteopathy, and really more than the stethoscope killed homeopathy, is anesthetic-aseptic surgery. The osteopath only gets three dollars for reducing a vertebral subluxation but he gets $250 for removing a chronic appendix and our osteopaths, in their mother school at Kirksville, Missouri, have one of the most flourishing surgical clinics in the West. For emblazoned over the doorway of osteopathy are the fighting words of Dr. Still's brother-in-law when he was converted to the idea of becoming a practitioner: "Hallelujah! There's money in it!"

If I am to argue fairly against mv own thesis of opposition to change as a form of progress, I must also confess that there is no more gloomy period of medical history than the long, classical era of the late seventeenth and early eighteenth centuries when the doctor of the long robe learned what he had to learn in school and then never learned anything more the rest of his life.

There is an eternally funny scene in Moliere's "La Malade Imaginaire" which is a burlesque of the examination of a candidate for the degree of Doctor of Medicine. The faculty sit enthroned and ask the candidate what would you do for colic, for asthma, for dropsy, for vapours. And invariably, no matter what the malady, the candidate says:

"Clisterum donare
Postea bleedare
Afterwards purgare."

And always the faculty answers:

"Bene, bene, bene respondere.
Dignus, dignus est intrare
In nostro docto corpore."

At one inspired moment a faculty member asks what he would do if his purgation, enemas and bleeding failed in a given case and he replies:

"Re-bleedare, re-purgare and re-clysterisare."

One may laugh, but a mocking echo of our own days suggests that perhaps our candidate when suggesting remedies would say no matter what the malady:

"I would sulpha them, vitaminize them, endocrine them" and if that failed

"I would re-sulpha them, re-vitaminize, re-endocrine."

How does one resolve these conflicting states of mind—those of the urge to join with the new and those of sticking with the old? There were some courses that were taught at the mediaeval universities that I wish we could find room for in our own. I refer especially to Logic and Rhetoric. The rhetoric of Aristotle was not the sterile rhetoric course of our schools which consists in turning in a weekly composition. It did not consist in verbal tricks. It was a way of life. It was a training to face and express the great verities. It was the uniform for man's ordered thought. It allowed men—lonely and eternally isolated as each of us is—to say something which would stir understanding and comradeship. It concerned the really fundamental question of the nature of expressing ourselves in such a way that we can be understood. I will ask you to go over the articles in any issue of a medical journal and see whether you do not think our medical leaders could profit by a course in Aristotelian rhetoric.

I asked in a medical clinic for our junior students the other day how many had ever had a college course in Logic. Only one hand went up out of eighty. I was trying to make them determine what sort of reasoning was used in making a diagnosis— inductive or deductive. Surely it is fairly fundamental that we know. And yet we slide, glide or push through the world, arguing, gesticulating, disagreeing, without the least training in the subject that we are using. Every year now for several years I deplore in print the casualties that occur in college, and especially high school football. Last year I collected fifteen deaths, and among casualties, three leg amputations, which seems to me a high price to pay for a game of sport. My remarks always cause great indignation among coaches and often among high school superintendents. One of the latter wrote a letter to the paper saying that if the boys did not play football, they would probably get killed or maimed driving their fathers' motor cars. Will you please regard that as an example of logic from a man who is supposed to be an educated man? I am not in favor of the boys getting killed driving their fathers' motor cars, but he implied that I was forcing that alternative upon them. It is, I believe, the fallacy technically known in logic as diversion.

I take another example which allows me to introduce to your notice probably the most spectacular sentence in the English language. It concerns vitamins.

About three years ago I read the statement of Dr. Thomas Parran that 40,000,000 Americans were living in various stages of nutritional deficiency, notably vitamin deficiency. This estimate was based not on any survey of the actual people in the population, but on a survey of income groups. Dr. Parran concluded that it was simply impossible for a person who earned so little that he spent thirty cents a day on meals to be in vitamin balance. I grant this, but I think there is a fallacy because what should have been estimated was family, not individual income. This country exists economically today largely as family groups—what they eat represents in 70 per cent of cases the pooled resources of the family. At any rate the figures, however they were arrived at, astonished me because in a large clinic and hospital service I very seldom see evidence of vitamin deficiency.

So I started an investigation than which nothing seemed to me then or seems to me now more innocent and, indeed, laudable. I started to find the incidence of vitamin deficiency in the American population. So I wrote to my friend, Dr. Howard Sprague, who very kindly and laboriously went all over the diagnoses made at the Massachusetts General Hospital for the three years of 1938, 1939 and1940 and found only 111 cases of vitamin deficiency in 46,857 admissions (0.25 per cent).

Now note that I did not make these investigations myself: the personal equation was omitted. Nor did I influence Dr. Sprague in the least by suggesting what turn my thoughts were taking. I selected the Massachusetts General Hospital partly because believed its staff was fully alert to the signs of vitamin deficiency and partly because it represented income groups of several levels. I selected three years during which definitions of vitamin deficiency were crowding the literature.

I also received statistics from Johns Hopkins Hospital which cover ten years and about Johns Hopkins and its staff, surely much the same things can be said as of Massachusetts General. The results were from 1930-1940, in 150,000 admissions, 170 cases of vitamin deficiency (0.14 per cent).

I also have the figures from such geographically widely located institutions as the University of Kansas Hospitals, the Kansas City General Hospital and the County Hospital of Santa Barbara, California. These showed: at the Kansas City General Hospital from 1938-1940, 36,000 admissions and 36 cases of vitamin deficiency, and at Santa Barbara, 6,397 admissions with 26 cases of vitamin deficiency. At the University of Kansas Hospitals over a period of three years there were 19,152 admissions with 26 cases of vitamin deficiency and in the out-patient department, 80,000 admissions with 114 cases vitamin deficiency.

I was aware that in a hospital population only the very marked examples of vitamin deficiency would appear and I was warned that there were subclinical or precritical stages of these conditions. So I made a list, after careful consideration of the literature, of the signs of precritical deficiency. They consisted of such things as keratotic plugs around the hair follicles, glossy tongue and other symptoms which I took into consideration, although I was far from convinced that they all really represented signs of vitamin deficiency. Then I prepared questionnaire which a physician who is medical attendant at an industrial plant applied very carefully to 300 unselected workers and less exhaustively to 1,500. I say "less exhaustively" because we made no laboratory blood examinations on the 1,500 nor did we quiz them at such length. The investigation took over three months to complete. Please note that this was an income group comparable to the poor income level group Dr. Parran at first investigated. We found not one single example of what we could honestly call nutritional deficiency, either clinical, subclinical, precritical, vitamin, mineral, fat, protein or any other kind. We found, it is true, a proportion of underweight among them but we could not actually ascribe this to undernutrition.

One would have expected that when these findings were announced it would cause some rejoicing, especially among those officials who were lately plowing under every fourth row of vitamin—and mineral-containing vegetables and slaughtering and destroying every fourth pig, cow and sheep in our country and who are now telling us unctuously that taking away sugar is good for us because we eat too much of it anyway and are, in general, grossly over-fed.

But nothing of this kind happened. I was the recipient of letters which ranged from more or less judicial criticism to open vituperation. I was the subject of articles and letters in medical journals in which I was sometimes called by name and sometimes referred to as "some people." I was told that I had not considered the preclinical forms when, as a matter of fact, I had taken particular pains to point out that I was considering them more than anything else.

All this, however, is by way of preface. It is now my privilege, in order to advocate the value of Aristotelian logic, to lay before you the sentence I mentioned above. It occurs in an article by Dr. Norman Jolliffe, Dr. James S. McLester and Dr. H. C. Sherman, all gentlemen for whom I have in general the greatest respect. Their research was done, mind you, under the auspices of the Food and Nutrition Board of the National Research Council: it therefore represents a pronouncement of your Government. In the summary and conclusions they state:

"Some types of malnutrition are strikingly obvious to everyone; some are apparent only to the physician who looks for them, and some are vague and elusive even to the careful observer using the most accurate, specialized techniques. If the first group alone is counted, the prevalence of malnutrition will be recorded as low, almost negligible. If the second group is counted, it will be high. If the third group is included, the rate will be sufficiently high to occasion genuine concern."

I take it that my own observations are in agreement with these gentlemen to a certain point. In other words, the first group which contains specimens so strikingly obvious that even I could see them corresponds to my list of hospital cases of frank pellagra, scurvy, rickets, etc., which are in numbers negligible. The second group, apparent only to the careful observer, I assume to be subclinical varieties and while I did not find them as frequent as these observers, I will let the difference pass.

But what of the third group? What of those who are vague and elusive even to the most careful observer, but the numbers of which are sufficiently high to cause genuine concern' How do they know they are sufficiently numerous as to cause concern when they are so vague and elusive that even the most careful observers with the most accurate techniques can't recognize them? Why work up genuine concern over such vague matters? Yet the same Government is prepared to spend millions and billions of dollars to correct this vague and uncertain defect; they are prepared to publish all kinds of scare heads about it; to give out interviews which are designed to make every citizen restless, uncertain, and fearful; to issue posters, movies, propaganda, demagoguery whose sole object is to state very positively something that is vague and elusive and that by implication only the Government can cure, because the most careful private practitioner, using the most scientific apparatus cannot detect it, to send Government minions scouring the countryside destroying faith in the individual practitioner and preparing the way for a centralized government dictatorship which is to plan your food, your fortunes and your sacred honor.

I am perfectly willing to acknowledge that there are plenty of things that are vague and elusive that still have reality: I have studied enough Kant and Spinoza for that. But in being asked to recognize clinical entities, I am afraid I will have to have something more definite. In my medical dictionary there are 99,000 words. Wouldn't it have been possible among all these to have found at least a few words which designate symptoms or signs of the conditions mentioned? Is it utterly impossible even to attempt a definition? Is it the hair, skin, teeth, tongue, lips, nails, whole body, legs, arms, eyes, ears, heart, urine, blood, liver or what that is affected? Or does recognition just depend on a kind of feminine intuition that those in the know have and I haven't and if they say there is nutritional deficiency present, it is present; and if I say it isn't present, it nevertheless is. I am sorry, but I must decline to enter the lists on those terms.

I have no wish to make an issue of this, especially in this peaceful assemblage. I simply wish to reiterate my point: that a preliminary study in old-fashioned Aristotelian logic and rhetoric might have clarified the situation.

But our intellectual dilemmas that concern the technical advances in our craft are fairly easy to solve compared to the social adjustments we are asked to make. For few of us are trained to think in terms of social adjustments and even if we were, we are constantly being interrupted. Just as I am about to inaugurate an insurance state-controlled hospitalization plan, I am called to visit old Mr. Smithers who has his pain again and nobody but me will do. No other member of the group, not even the leader of the medical Communist party, or the Third Assistant Regional Director of National Socialized Health. Only poor old humble, tired me.

I have no wisdom, even no opinion about these matters; in fact, the discussion of them bores me intensely. It seems to me they will all be adjusted eventually without my help, in fact, in spite of it. There are some things that are suited to State medicine, some that are not. There are some men suited to it, some who are not.

For instance, the surgeon is nearly always an individualist, conservative and pooh-poohs social schemes of change. This is perfectly natural: he has learned a special skill at much expenditure of time and trouble. And as is the case with most men or women who learn unique skills, he gets well paid. If you have to have your Gasserian ganglion cut or your gall ducts reconstructed, you want somebody who has learned how to do it cleverly and surely even though he may be a prima donna, a real blue Persian cat, you are going to pay him and you don't want the third-best government surgeon in West Wyoming. On the contrary, the prevention of typhoid fever, which is far more important than the removal of all the Gasserian ganglia that ever were, can be done by a sergeant or even a corporal, or a nurse or a technician. And in between is every gradation of human necessity and only those of us who have practiced clinical medicine can tell which is which.

In other words, I vision a future of medicine like education, in which public and private practice will exist side by side. And on the long road that medicine has followed, it is not the changes that impress me. Each one of you could have sat in that first meeting of the Connecticut State Medical Society and taken your part in the discussion according to your light and character.

The astounding thing is not the changes, but the fact that little that is essential has changed at all. We read in the "Epidemics of Hippocrates" such a case history as that of Silenus, who lived on the Broad-way:

"Silenus lived on the Broad-way, near the house of Evalcida. From fatigue, drinking, and unseasonable excesses, he was seized with fever. He began with having pain in the loins; he had heaviness of the head, and there was stiffness of the neck. On the first day the alvine discharged were bilious unmixed; urine black, having a black sediment; he was thirsty, tongue dry; no sleep at night. On the second, acute fever, an uncomfortable night, slight delirium. On the third, all symptoms exacerbated. On the fourth, in the same state. On the fifth, bilious. On the sixth, slight perspiration about the head. On the seventh, loss of speech. On the eighth, a cold sweat all over; red rashes with sweat."

When we read that record of daily, patient, clinical observation, the centuries fade away and we are standing there also in the hot Aegean twilight in the house on the Broad-way with our daily record sheet in one hand, making our own notes with our fountain pen.

And so we are linked by habits of thought, by a common viewpoint, by consideration for our patient, directly to that company of gentlemen who met to found the Connecticut Medical Society in 1792 and to every successive component body who foregathered since to meet and discuss, to propose or oppose the new ideas of science in their day and the changing modes of living.

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July 27, 1993

Dear State Medical Society President:

The state of Iowa is currently suffering through a devastating natural disaster in the form of record flooding. The flood waters have begun to recede somewhat and the cleanup has begun in earnest. Tap water has now been restored to Des Moines, though it will not be drinkable for at least another week.

Though it is too early to assess the damage caused by the floods of 1993, it is certain the cost will be very high. One-third of Iowa's corn and bean crops are gone and hundreds of people have lost everything, including their homes. Business losses just in the city of Des Moines could exceed $700 million. Damage to bridges, roads, sewer systems, etc. in many Iowa cities and towns has yet to be assessed but is sure to be extensive.

Fortunately, Iowa hospitals and clinics were able to continue functioning on a normal basis. There has been no outbreak of disease and the death toll has been fairly low considering the magnitude of this calamity. As a preventive measure, volunteers have given tetanus shots to thousands of Iowans in recent days.

The expressions of concern and offers of assistance which I and members of the IMS staff have received from medical societies across the country have been heartwarming. The support and assistance offered by generous Americans in every state has made this tragedy more bearable for many Iowans. Many of you have asked what you might do to help.

Financial donations are sorely needed to assist Iowans forced out of their homes so quickly they were able to save nothing. Following are the addresses of several organizations accepting donations:

Iowa Cares
666 Walnut
Des Moines, Iowa 50309

American Red Cross
2116 Grand Avenue
Des Moines, Iowa 50312
ATTN: Brother Phillip

Salvation Army
1330 6th Avenue
Des Moines, Iowa 50304
ATTN: Lt. Hellstrom

You may wish to publicize these addresses in your newsletters, magazines or other member communications, in case some of your members wish to make donations.

Again, thank you for your expressions of concern. Pray with us that the heavy rains have ended and that we will come through with no further harm to people and property.

Sincerely,

John Anderson, MD

John Anderson, M.D.
President, Iowa Medical Society

THE PRESIDENT'S PAGE

TQM, CQI, QIP, IQMS, or GRM

There is an increasing interest on the part of many hospitals in utilizing new technologies to improve their clinical performance. Blumenthal has recently reviewed this development from the physicians viewpoint.[1] Although the Joint Commission on Accreditation of Healthcare Organizations (whose chairperson was our member Helen Smits) adopted IQMS as a standard and more than three thousand hospitals have TQM programs, not all physicians have signed on to these new acronyms. They should consider carefully whether or not their private practices could benefit from some of these concepts which are applicable to even a very small business.

What are these programs, which are quite similar in approach and examine complex processes (clinical pathways) or simple interpersonal interactions?

Total Quality Management = TQM
Continuous Quality Improvement = CQI
Quality Improvement Process = QIP
Industrial Quality Management Science = IQMS

All of these apply statistical quality control techniques to measure what is going on both before and after change. All try to modify organizational culture from the top down, instilling feelings of pride in one's work and encouraging team activity. Most importantly, all try to do things in terms of the patients' perception of their needs.

This latter process I call *Golden Rule Manaqement* or GRM. Simply, what we do should be what we would want for ourselves if we were the customer. When the bank gives us a loan or mortgage do they say thank you, or do we? When you remove a gall bladder, set a fracture, deliver a baby, do you thank the patient for using you for that service, or do you wait for the patient to thank you?

Translated into our offices, our clinics, our hospitals, the care we give should be with the same sensitivities we seek for ourselves.

What are some of those sensitivities?

1) Our office staffs should treat each encounter with a patient (by telephone or in the office) as though that patient were a valued client of the practice. Telephones should be answered by the fourth ring, "on hold" time should not exceed 45 seconds, relationships should be friendly. In the office artificial barriers to patient contact (walls, sliding windows, etc.) should give way to more direct person-to-person contact. Smiles, caring, and listening skills are more important than protecting our office help from "interruption" by patients.

2) Test results should be communicated to patients as soon as they are available to the physician, even if the results are normal. Once a patient has been tested her mind focuses on the possible negative implications of the test until she learns the results. A good example is the screening mammogram. Some physicians report results to the patient before she leaves the test site, others may not be present when the mammogram is done, or may do mammograms they are not able to interpret themselves. Resultant delays for up to five days are a source of stress for the patient.

3) We should all be considerate of the patient or family who do not remember all of our instructions after leaving the office. Patients often demonstrate uncertainty about what they were told. Often this is not due to a lack of intelligence or inattentiveness but, rather, the stress of the encounter. Be prepared to repeat or explain your instructions. When reasonable, train your office staff to assist in this process.

4) Never forget the three "A's" any patient expects from any provider—ability, affability, availability.

5) *Never role reverse.* We are the caregivers, patients are those who seek our care. They can be difficult but they are the patients, we are the doctors. Staying nonjudgmental and sympathetic is important. We are healers, not sources of stress.

All of this suggests we treat a patient as we wish to be dealt with ourselves in similar circumstances. But if that isn't reason enough to use GRM in our practices, consider the shrinking health care marketplace. Although cost and efficiency will help us in coping with the competitive nature of the delivery system of the 21st century, the ultimate

(continued on next page)

edge will go to the perceived high-quality competitive networks whose physicians are caring. In an age of thing-orientation, people-orientation is a precious commodity to be preserved and nurtured.

More and more in other sectors of the economy TQM is providing an edge for the more successful enterprises. No doubt it will be true for those of us who wish to be equally successful.

I can't prove my next comment is correct, but it seems so intuitively. Given an office that is professionally competent, an atmosphere of GRM will result in a better outcome for the patient more often than not. It never hurts to be nice.

Howard J. Wetstone, M.D.
President

REFERENCE

1. Blumenthal D: Total quality management and physicians clinical decisions. *JAMA* 1993; 269: 2775-8.

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Dr. Johnson and His Burden of Illness

ROBERT U. MASSEY, M.D.

A MONTH ago during a visit to London my wife and I, as we always do when we are there, had supper at the Cheshire Cheese off Fleet Street. Being in that ancient hostelry in the neighborhood of his house sets me to thinking about Dr. Johnson. He is one of those writers I have spent much time reading about but too little time actually reading; his Tory convictions, devotion to the established church, even Jacobite leanings, and his exertions to overcome his idleness "by prayer and sacrament" are qualities I understand.

Encountering Samuel Johnson has, however, occasioned anxiety in me more than once. In my eighth grade English class I drew an assignment to write a report on Boswell's *Life of Johnson*. Of course, the volumes were not in the school library so my father and I visited a couple of second-hand book shops. Thumbing through a book of essays by Macaulay one of us spotted in the contents "Boswell's Life of Johnson." My father bought the book, I think for a dollar or so, and I was sure that I was home free until I found that what I had in hand was only Macaulay's review of Croker's 1831 edition of the real Boswell. Anxiety ruined the weekend, especially since until then I had been doing well in that class. My teacher was sympathetically unforgiving and suggested that a trip to the Detroit Public Library would have solved my problem. I still treasure that 1877 edition of the *Critical and Historical Essays Contributed to the Edinburgh Review* by Lord Macaulay and have since read many of these 27 essay reviews.

On my first day in freshman comp at Oberlin the professor placed on his desk a copy of Joshua Reynolds' familiar portrait of Samuel Johnson. "Identify the subject," he said, "and write a 750-word description of the portrait, relating it to what you know about the man"—or words to that effect. My memory fails me after that, but I recognized the man and must have written something acceptable because Mr. Kennedy gave me an A for the course, and we later became good friends, but that is another story.

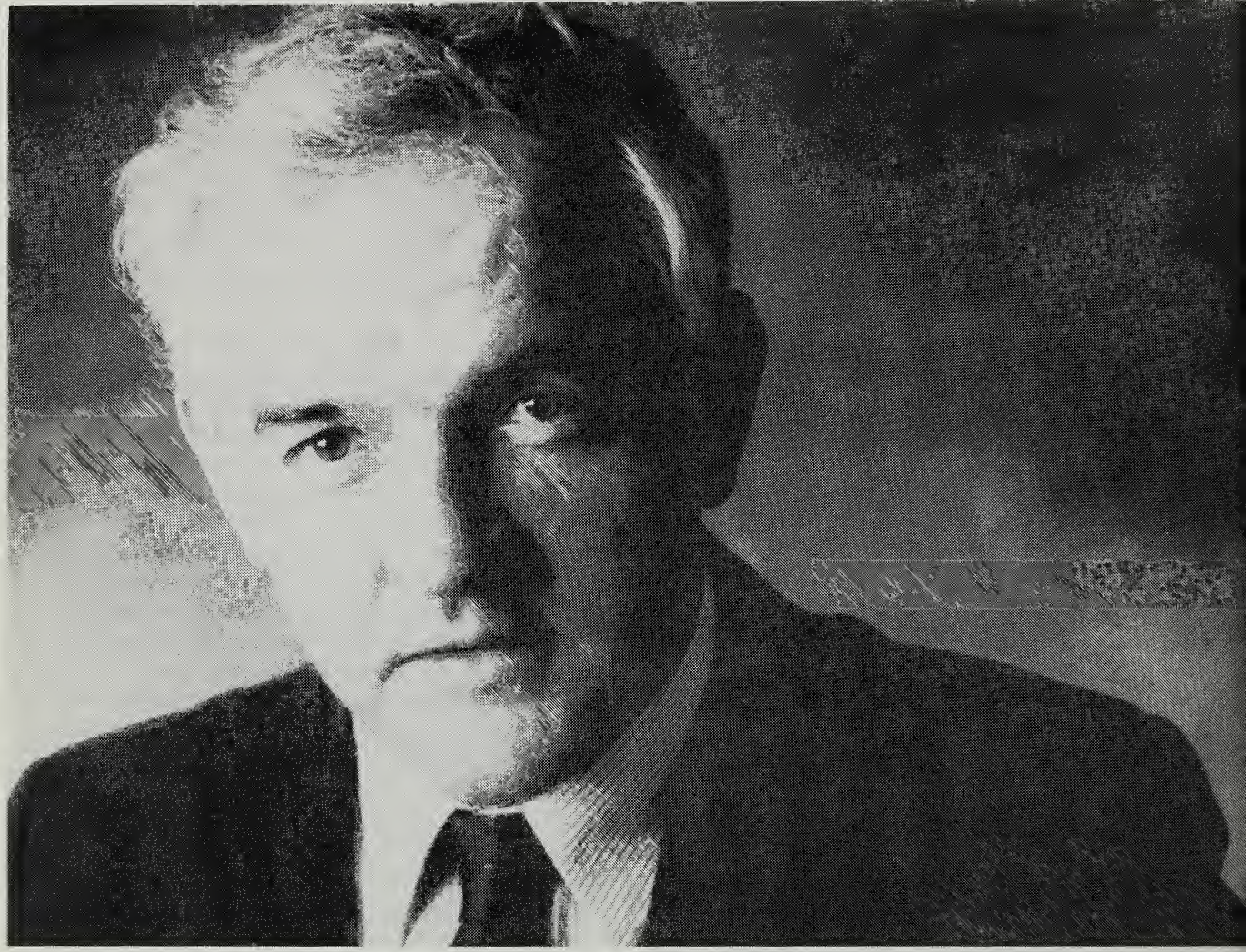
Before isoniazid, streptomycin, and PAS every medical student knew about scrofula and most of us were told that Dr. Johnson had had the disease, that you could see it in his portraits, and that he got it from his wet nurse. I am not sure about the portraits, but he was convinced that he acquired it "from the bad humours of the nurse, whose son had the same distemper...." Queen Anne's touch was of no avail. Blind in one eye, possibly attributable to tuberculous keratitis, he developed iritis in his sound eye years later. "My health from my twentieth year has been such as has seldom afforded me a single say of ease," he wrote when he was 69. At another time he said, "I inherited a vile melancholy from my father, which has made me mad all my life, at least not sober." Johnson remains one of the ornaments of English literature, a giant in a century of giants, a writer prodigiously fruitful and remarkably broad in his interests, which included medicine.

We recall the blind poets, Homer and John Milton; Stephen Hawking, Lucasian Professor of Mathematics at Cambridge, quadriplegic and voiceless; Darwin with his depression and dyspepsia; Flannery O'Connor writing to the very end worn down by lupus and iatrogenic hypercorticism, and all of the men and women we have known who worked and even flourished, strengthened in spirit, if not in body, by their burden of illness.

Health is not the supreme good nor illness and disability the greatest evil. When we are thrilled by the music of Mozart or Mahler or laugh at O'Connor's account of her cigaret-eating peacock or imagine we comprehend space-time after reading Hawking's lucid explanation or are pleased to imagine the presence of that "vast body ... in constant agitation, see-sawing backward and forward" walking toward his chair in the Cheshire Cheese, we should give thanks that our world has not been peopled exclusively by the healthy, and that the silly goal set forth by WHO in the late 1940s, that we should strive for a universal "state of complete physical, mental, and social well-being and not merely the absence of disease...," has been quietly buried with other utopianisms.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

"Filling out insurance forms gives my patients a pain in the neck."
—Dr. Patrick J. Carolan, Orthopedics, Bridgeport, CT



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MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

- "No one envied me when I was paying $20,000 a year in tuition or when I was working 100 hours a week as a resident. No one was bashing me then."

New York orthopedic surgeon, Dr. Michael Elia.

- "Congress is a very independent animal and the problem of gridlock is not one of party, it's one of money. All the interest groups have the power to veto what hurts them. The AMA can't pass its bill, the hospital association can't pass its bill, the pharmaceutical association can't pass its bill, but all these groups can stop a bill that gores them."

Former HEW Secretary Joseph A. Califano,
speaking on health reform.

- In 1972, 24% of the federal government's budget went to health and retirement programs....By 1992, the amount had risen to 40%....It is estimated that by 1998, without changes, almost half of federal spending will go to Medicare, Medicaid, and Social Security.

- Medicaid costs rose from 10% of state spending in 1987 to 17% in 1992, according to the National Association of State Budget Officers.

- According to the Census Bureau, the world's over-65 population is increasing by 200,000 per week and soon will increase by one million per month.

- Disability rates declined among the elderly over the 1980s, even as the population 65 and over increased by 14.7% to 30.9 million people....The chronically disabled older population grew by 9.2%, rather than the 17.7% forecast from earlier rates....Those over-65 reporting no disabilities rose from 76.3% in 1982 to 77.4% in 1989.

- A 1988 federal law requires states to pay all Medicare premiums, copayments, and deductibles for elderly Americans with incomes below the poverty line.... According to a recently released study, 1.8 million of the 4.2 million eligible persons were not receiving the assistance as of the end of 1992—often because they did not know of its existence.

- Only 2% of those aged 64 to 75 live in a nursing home and 20% of those older than 85....A total of about two million Americans at any one time lives in them.

- Some 42% of HMOs are owned by commercial insurers or Blue Cross/Blue Shield plans.

- Since 1960, the U.S. population has increased 41%, GDP has nearly tripled and social spending by all levels of government has risen from $144.73 billion to $787 billion....During this same period of time, there has been a 560% increase in violent crime, a 419% increase in illegitimate births, a tripling of the percentage of children living in single-parent homes, more than a 200% increase in the teenage suicide rate and a drop of almost 80 points in SAT scores.

- Americans will spend an estimated $175 billion out-of-pocket, about $1,923 per household, if a 3% payroll tax on employees is enacted (as part of a health reform proposal).

- A national publication reports on Green Lake, Pennsylvania (population 442), where both political parties forgot to nominate anyone for mayor, town council, or tax collector. Nobody is running for anything. Residents expect an economic miracle soon!

- *Only in America:* Olive Preito was considered to be a geriatrics miracle at the Florida state retirement office. The longtime public school teacher had turned 107 in January and was still going strong, cashing her monthly pension checks at a military surplus store.

A few months ago state workers called her apartment but she never answered the phone. Further investigation revealed that Ms. Preito had really died 43 years ago in 1950. Her 72-year-old nephew has been cashing those checks (worth about $125,000) since he was 29 but now faces charges of grand theft and forgery.

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Call for Papers

1994 International Conference on Physician Health
September 16-20, 1994. Ottawa, Ontario, Canada

"Stress: The Profession, the Family and You"

The 1994 International Conference on Physician Health, co-sponsored by the American Medical Association, the Federation of State Medical Boards, the Canadian Medical Association, and the Federation of Medical Licensing Authorities of Canada is scheduled for September 16-20, 1994, at the Ottawa Westin Hotel.

Ottawa is Canada's capital and offers many national museums, over 60 miles of bicycle paths, hiking in Gateneau park, squash courts and swimming at the hotel and golf nearby.

The conference will provide a forum for practitioners and researchers to present recent findings and innovative treatment and education programs in physician health. This conference will address a range of issues, such as AIDS, HIV, problems related to aging, mental illness, substance abuse and physical disabilities and limitations, including those caused by general medical conditions. Possible topics for presentation include: presentation and treatment of health problems among physicians, the impact of disorders on physicians' families and practices, medical-legal issues facing hospital administrations and licensing boards, and material on health promotion and disease prevention. *Abstracts which address issues related to these topics (i.e., prevention, diagnosis, treatment, rehabilitation), but not dealing specifically with physicians are also welcome.*

Three types of presentations regarding these physician health issues are invited:

- **Poster Presentations**
  Written presentations of data-based research, epidemiological research, or program descriptions.
- **Paper Sessions**
  Oral presentation of scientific, data-based findings relative to the topic of physician health.

  Abstracts for poster presentations and paper sessions should contain an introductory statement on the significance of subject matter. Description of methods, results, and conclusions should follow the introductory statement.
- **Workshops**
  Training or instructional presentations, designed to improve specific skills of persons who work in the area of physician health.

  Abstracts for workshops should contain information on the program's intended audience, goals, teaching strategies, and materials. Evaluation data should be summarized

Abstracts may not exceed 200 words. Any abstracts exceeding that length will be rejected. Abstracts should be typed, double spaced, and mailed (not faxed). Four copies of the abstract should be sent, along with one self-addressed, stamped envelope. All submissions must list the primary and secondary authors and their professional affiliations. Telephone number and address of primary author must also be included.

Submissions *must* be received by February 1, 1994.

Abstracts will be submitted for blind review. Abstracts will be judged on their applicability to the conference topic area and their scientific merit. The decisions of the blind reviewers will be communicated to the abstract's primary author by April 1, 1994.

All presenters are expected to register for the conference at the AMA member rate. We are unable to provide any financial support for presenters. Presenters will also be responsible for their own transportation and hotel expenses, as well as making all reservations for same.

Send all materials to:
Elaine M. Tejcek, Physicians Health Foundation, American Medical Association, 515 N. State Street, Chicago, IL 60610.

American Medical Association
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Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that the are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

SO, KEEP ASKING QUESTIONS

To the Editor: Despite the fact (or possible because of the fact) that I have little need to interact with hospital administrators, I am concerned about Dr. Harvey Mandell's statement (Letters to the Editor June, 1993) that he found it, "...hard to believe that one could attack and challenge someone of Dr. Ahamed's stature." My concern is that when, both as physicians and citizens, we stop questioning, stop challenging the people who are administrators and in positions of power, we lose the strength that is the heart of participatory democracy.

We certainly don't need to concur with any or all administrative decisions, but when we accept an administrator's demeaning the basic act of questioning a particular position, we are eliminating the element that helps to keep our leaders honest.

So, keep asking questions, Dr. Volpintesta. People in high places need to know that some of us are watching most of the time, and they should be ready to justify their decisions on any or all of the positions they take.

Leonard S. Krassner, M.D.
Wallingford

RELIEF OF BENIGN ESSENTIAL BLEPHAROSPASM AND ? MEMORY LOSS BY CYPROHEPTADINE

To the Editor: A letter in the *New England Journal of Medicine* pointed out that benign essential blepharospasm (BEB) can be a severely incapacitating disorder characterized by a progressively debilitating spasm of the the orbicularis oculi and upper facial muscles, ultimately interfering with vision.[1] Available pharmacologic and surgical therapies were not satisfactory. Local injections of botulinus A toxin for neuromuscular blockade may yield only temporary benefit, and myectomy to remove the eyelid muscles requires general anaesthesia and lengthy surgery.[2]

The letter went on to present a new pharmacological approach involving decreasing the hyperexcitability of facial motoneurons located in the brain. Since the excitability is much enhanced by serotonin (5-hydroxytryptamine)[3] acting through 5-hydroxytryptamine[2]-receptors,[4] a therapeutic trial of cyproheptadine was undertaken, as that drug blocks serotonin-induced increase in facial motoneuron excitability.[5] Furthermore, cyproheptadine blocks activity of calcium channels which play a role in motoneuron excitability enhancement.[6-7]

Methods and Materials

The relatively safe and easily available cyproheptadine was tried on five patients ranging in age from 52 to 79 with severe longstanding blepharospasm of five to 30 years. Three improved dramatically, and one improved moderately; the remaining patient had a good initial response, but the drug was stopped because of drowsiness and mouth dryness from the antihistaminic and anticholinergic properties of cyproheptadine. Improvement in the four patients occurred in a few days and has keen sustained on doses of 4 mg two to three times a day. All had been started on their first dose at night anticipating possible drowsiness. In the first week 2 mg (a half tablet) three times a day worked best and was safest. All patients had an examination by an ophthalmologist to rule out eye problems, and all had been given a Schirmer test to rule out dryness of the eyes. When indicated preservative-free eye drops were ordered. History of and findings of chemical exposure were noted and treated. For photophobia dark glasses were used. Additionally, each patient had been advised to have a neurological clearance and find a personal physician who would read and follow the Physician's Desk Reference (PDR) on side effects. In men prostatic problems must be diagnosed and treated. Concurrent alcohol, tranquilizers, tricyclics, MAO inhibitors, and fluoxitines should be avoided, as should stress. Coffee or the larger dose at night helped drowsiness problems. Hard candy or gum helped overcome dry mouth. Individualization of the dose is imperative. Surprisingly, some can tolerate as many as six 4 mg tablets six times a day with minimal side effects. Some can not tolerate even minimal doses of cyproheptadine. These are few in number.

Results

Improvement can occur in a few days or in a week. Five additional patients who had unsatisfactory results with botulinum A injections, today's "gold standard" (one after 12 injections), had marked improvement with cyproheptadine, 8 to 24 mg/day.

Memory Loss.—An exciting additional benefit of cyproheptadine treatment relates to its apparent effect on memory loss: Following medical, ophthalmologic, and neurologic clearance, an intelligent white male of 79 with severe BEB for 20 years was begun on a course of cyproheptadine, 2 mg t.i.d. He improved on 2 mg b.i.d. and 4 mg h.s., plus eye drops for dry eyes. He had complete relief of his BEB without drowsiness or dryness of the mouth, and with disappearance of throat fullness and neck muscle tightness. He volunteered that his short- and long-term memory improved: "A haze in my mind disappeared. I now remember where I left my keys and why I had come to the refrigerator." Another patient reports short and long term memory improvement with 4 mg h.s., while still another patient reports memory improvement on 4 mg each morning.

Memory has been improved with cyproheptadine in the Aplysia sea snail and monkeys, but has not previously been reported in humans. Yale professor of biology and psychology Thomas Carew, a pioneer in this field, and others, caution that despite similarities in memory improvement in the snail and monkeys, no correlation presently exists for enhancement of memory improvement presently via the same types of neurotransmitters in humans.

Summary and Conclusions

These results in a small group of patients seem quite clear for the benefit of cyproheptadine in patients with BEB, especially where botulinum A injections fail, are too expensive, or are refused. The apparent memory improvement requires further study. A search for more effective serotonin antagonists without the anticholinergic and antihistaminic side effects of cyproheptadine is needed and is in process.

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R.M. Fasanella, M.D.
Chief-Eye Research, St. Raphael's Hospital
Former Chief of Ophthalmology-Yale
Orange

From the Executive Director's Office

COUNCIL MINUTES

Thursday, 24 June 1993

Attendance

Present were in addition to the chairman, Dr. Joseph Czarsty were: Drs. Ahamed, Beck, Bigos, Blum, Bobruff, Cottle, Eslami, Franklin, Freedman, Geary, Herzog, Hollister, Kamens, Keating, Lesnik, McDonnell, Meridy, Sadowski, Sosa, Wetstone, Wolfson, Zanker.

Also present were: Dr. Orphanos, Mr. Norbeck, Mrs. Lindquist, Mr. Brunell, Mrs. Connelly, Mr. Sullivan, Mr. Garofalo, Mr. Thompson (FCMA), Mr. Freberg, (NHCMA), Mr. Fiorentino (HCMA).

Absent were: Drs. Brooks, Deren, Fischbein, Leach, Parke, Petro, Redmond, Scarpa, Schwartz, Tesoro, Timmerman, Van Nostrand.

Organizational Meeting

The organization meeting of the Council for 1993-1994 was called to order by the President, Howard J. Wetstone, M.D. He welcomed the old and new councilors to the meeting. He stated that he had two goals this year that he hoped the councilors would share with him and help him to achieve. The first one is that the standards of professionalism be maintained as we are faced with the changes being proposed in the delivery of medical care. He stated that we must continue to remind ourselves as to who we are, where we came from and what are commonalities are while all the tension takes place. The second goal is to be sure that the State Medical Society has a voice representing the physicians in any forums on health care reform in the State of Connecticut. Following his remarks he called for nominations for Chairman and Vice-Chairman of the Council for 1993-1994. It was VOTED to elect Joseph C. Czarsty, M.D., Oakville, Chairman, and Joseph S. Sadowski, M.D., Hartford, Vice-Chairman.

Business Meeting

Dr. Czarsty thanked the Council members for their confidence in electing him chairman.

Reports of Related Organizations

CPRO: Dr. Kamens reported that the progress being made on the Cardiovascular Project is significant. A statewide committee has been formed, and there is also a sub-task force that has been designed to bring as much scientific expertise to this project as possible. The information derived from this study will be distributed to all the hospitals in Connecticut. He reported that the reception that CPRO has received at the hospitals has been uniformly positive.

CSMS-CNA Meeting: Dr. Beck, Chairman of the Committee on Allied Health, reported on a meeting held with three members of his committee with representatives of the Connecticut Nurses' Association. The CNA suggested that the Joint Practice Committee be reappointed. Dr. Beck informed them it was felt that there was no need for two committees and that the members of the disbanded committee had been merged with the Committee on Allied Health and that committee would be able to carry out its purpose. The CNA has a national proposal for health care such as we have Health Access America. Another meeting has been scheduled to determine issues of common interest and areas of contention.

Liaison with Connecticut Hospital Association: Dr. Meridy reported on the first meeting held with the physicians on the Connecticut Hospital Association's Quality Assessment Committee. It appears that the release of physician identifying data may take longer than previously estimated.

M.D. Health Plan: Dr. Catrini was unable to attend the meeting and requested Mr. Norbeck to give his report to the Council. It appears that there was some misinformation published concerning the contract with state employees and that Dr. Catrini's letter to the newspaper correcting the statements was misplaced. A meeting was held between M.D. Health Plan personnel and editorial writers from the Hartford Courant and Dr. Catrini's letter has since been published.

Report of the President

(a) *Health Care Reform:* Dr. Wetstone reported on a forum held by the Hartford *Courant*, which involved representatives of the Greater Hartford area. The panel included representatives from CSMS, Cigna, Barbara Kennelly, Nancy Johnson, a member of the Hispanic community, and a leader from Middlesex County. It was reported that it was a very interesting forum. He also attended a panel discussion that Senator Dodd had in the Hartford area, who has been going all around the state, and complimented Dr. Brooks who made an excellent presentation at this hearing.

A meeting with staff representatives of the Legislative Program Review and Investigations Committee was held. This committee was charged by the legislature to sunset the Commission on Hospitals and Health Care. In the process of doing that the legislature tagged on to the bill authorization for the committee to do health care reform. This committee will spend the summer meeting with various health care providers, insurers, etc. to determine what could constitute a health care reform package. Drs. Beck, Zanker, Mr. Norbeck, and Mrs. Connelly also attended this meeting and were able to suggest to them names of people they may want to visit. The Public Health Committee has also taken the initiative to study health care reform.

Dr. Wetstone stated that he had received an invitation from the Columbia Institute in Washington which is arranging an all day forum for Senator Joseph Lieberman in Hartford on the subject of health care. The forum is known as the 1993 Connecticut Conference on Health Care. We have been invited to make physicians aware of this conference and asked them to attend. In response to the invitation, Dr. Wetstone asked that CSMS be represented on some of the panel discussions that were scheduled.

(b) *Tort Reform:* Dr. Wetstone supplied the Councilors with a copy of a document entitled "Medical Liability Talking Points." This document described tort reform that was established in California and is referred to as MICRA (Medical Injury Compensation Reform Act). It was VOTED to refer this subject to the Committee on Legislation for study.

Report of the Executive Director

Mr. Norbeck brought to the attention of the Councilors a copy of Hilary Rodham Clinton's speech that was presented at the AMA Convention and that was placed on the table for them. He commented that she told physicians what they wanted to hear and that she was very well received. He stated that he had attended 53 AMA conventions and heard many political leaders and that her delivery was the best that he has ever heard in that body. It was reported that September has now been mentioned as the month for the release of the plan.

It was brought to the attention of the Council, that an article in the newspaper reported that House Ways and Means Chairman, Dan Rostenkowski, has switched from "criticizing the Clinton health reform plan to cheerleading it." Formerly Mr. Rostenkowski suggested that the managed care competition plan was the "domestic equivalent of Star Wars."

Mr. Norbeck reported that, following consultation with several of the officers, several staff changes have been made to replace Kyle Ballou, Esq., former Director of Government Relations, who resigned in mid-March. Effective 1 July, 96th District Representative, Cameron Staples, Esq., a former CSMS staff member 1986-1989, and former chairman of the New Haven Board of Alderman, will become CSMS's legal counsel. Mr. Staples will remain a legislator and will not lobby for CSMS, and as a former employee will not require any on the job training. Mag Connelly and Marc Garofalo, who filled in the void during the current legislative session, have been assigned new duties. Mag Connelly will become Director of Government Relations and continue her work on the physician health program, and some of her other responsibilities, will be shifted over to Mr. Staples. Marc Garofalo will assume staff liaison responsibilities for COMPAC. He reported that he believed that these staff changes will strengthen our effort to meet some very challenging and difficult times ahead. It was VOTED to approve Mr. Norbeck's report.

Legislative Update

A synopsis of the key legislative issues involving CSMS was distributed to members of the Council which discussed the following issues: Health Care Reform, Workers' Compensation Reform, X-Ray Technicians and Safety, Fees for Providing Medical Records, Health Departments and Health Districts, Smoking, Assault Weapon Ban, Bicycle Helmets, Physician Owned Pharmacies, Managed Care, Sexual Assault, etc. Dr. Wetstone elaborated on some of the issues. He further reported that mandatory assignment was defeated in committee and that CSMSs efforts to increase physician reimbursement in the Medicaid program died in the Appropriations Committee. There was a bill introduced seeking to prohibit the economic credentialing of medical staffs which died in committee. Very few bills were raised to increase the scope of practice of the limited licensed practitioners. The Public Health Committee declared early in the session that they had other priorities, such as health reform.

There was lengthy discussion concerning bill SB 861, "An act Concerning Health Insurance Reform." It was VOTED to continue the CSMS Ad Hoc Health Care Connecticut Task Force.

Cancer Coordinating Committee

It was VOTED to appoint Chandra N. Narayanan, M.D., Chairman of the subject committee, replacing George Gorun, M.D., who resigned due to other commitments.

Accumed Update

Vince Manopoli and Rick Walters from Medicron, Inc., joined the Council to discuss their participation on the Advisory Group on Medical Fees of the Connecticut

Workers' Compensation Commission, representing the Connecticut State Medical Society. Mr. Manopoli gave a very comprehensive report on the part they played in this committee's study and distributed an outline which included the details of the scope of work undertaken by them, the outcomes, and open issues remaining. A report and recommendations of the Workers' Compensation Medical Fee Advisory Group presented to Chairman Jesse M. Frankl of the Workers' Compensation Commission was distributed to all members of the Council with the agenda, along with a report from Jeannette Schreiber, Esq., and a letter from Hoberman & Pollack, Attorneys at Law. He reported that as far as they were concerned Medicron has completed its work on this issue, unless they are called upon to testify at hearings that may be held. Following a lengthy discussion and questions and answer period, it was VOTED to accept the report as information.

Report of AMA Delegation

Dr. Kamens reported that Dr. Robert McAfee from Maine was elected President-Elect of the AMA and Joseph Painter, M.D., was installed as President. There were a great many resolutions introduced and he commented on a few of the issues as follows: changing the Bylaws concerning discrimination, a major seminar on Managed Care, anti-trust relief for physicians, a seminar on access of the underserved in rural and urban communities (Dr. Kamens was appointed to serve on the committee to study access in the rural communities). At reference committees issues such as constitution and bylaws on sexual orientation, DNR orders, rural physicians concern in managed competition, increasing compensation to rural physicians, uniform policies in addressing issues in Worker's Compensation, resolutions to discontinue CLIA regulations, resolution on what defines a family physician, programs from AMA to train physicians in management and administration, childhood vaccination, AMA budget, etc. A $20.00 dues increase was approved. The New England delegation introduced a resolution of regarding their concern regarding the war in Bosnia. A resolution was also introduced concerning a cap on money expended on political campaigns within the AMA. Third-party payments were discussed and the value of RBRVS and concerns about it being used by the private sector. He reported for the first time there were only one or two resolutions about PROs. Many of the resolutions discussed at reference committees were referred back to the Board of Trustees for study and report.

Dr. Zanker reported that this was his first AMA meeting and was impressed to see how hard the delegation works at these meetings. The House of Delegates is run very efficiently and everything is kept right on track. He stated that he came away from the meeting much more optimistic about the future of medicine and wished there was a way that all CSMS leaders could experience going to one of these meetings. He expressed the opinion that he does not believe that physicians appreciate the power and resources of the AMA that are there to be of assistance to physicians.

Building Renovation

It was VOTED to receive as information a communication from ACMAT that the final plans were going to be reviewed by the Fire Marshal and the Building Department and they have commenced taking bids on these documents while the drawings are under review.

Dates of Future Meetings

Wednesday, 1 September 1993
Thursday, 14 October 1993

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CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organiza-tions are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **INFORMATION FOR AUTHORS**. This material may be obtained from the Journal office (also printed in *Connecticut Medicine*). Adherence to the instructions will prevent delays both in acceptance and in publication. A copy of the manuscript on floppy disk (3-1/2" or 5-1/4") should be submitted along with the hardcopy.

Please send them to:
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Book Reviews

The Pregnancy Book for Today's Woman

By Dr. Howard R. Shapiro, M.D., 530 pp., illustrated.
New York, NY, Harper Perennial, Div. of Harper & Row Publishers Inc., 1993. $16. ISBN: 0-06-273030-4.

This is a worthwhile, well written, and well rounded-out book regarding this subject. The author, Dr. Shapiro, is one of our Connecticut physicians and practices in Westport. Being in private practice has given him great insight into the wide range of questions that patients ask and the information they seek from their obstetricians and gynecologists. Many books make their popularity on the use of bizarre and out-of-balance presentations; this is not one of them.

This book, with its 530 pages, including an index and bibliography, certainly includes more than pregnancy matters. There is an excellent up-to-date discussion on the role of birth control pills, IUDs, rhythm system, and all of the other methods of contraception. Menstruation, abortion, and sterilization are also dealt with in a clear-cut and easily understood manner.

Dr. Shapiro has incorporated the best in modern thinking on subjects about which we are so often queried. How does one choose an obstetrician? What to do about sports, traveling, sex, etc. during pregnancy? Although possibly redundant, smoking, poor health habits in general, and the importance of good nutrition are discussed here.

One of the more frustrating and perplexing problems facing the pregnant patient is the lack of uniformity in the opinions and decisions that she hears regarding commonplace matters in her daily life and health care. Again, Dr. Shapiro has reduced these to easily understandable and scientifically consistent answers for such subjects as traveling and pregnancy, the advantages and disadvantages of some medications of pregnancy, immunization needs, as well as the frequently asked questions in the worrisome field of where do we now stand with video display terminals, microwave ovens, and other nonionizing radiation devices.

Because the science and technology dealing with obstetrics has moved so quickly in the last few years, it is noteworthy that a section of his book deals with "new techniques"; the use of aminocentesis, chorionic villus sampling, amnioinfusion AFP testing, Doppler studies on the umbilical blood flow—all giving the patient some insight into these matters. This section is of special value to patients seeking answers when there have been genetic concerns because of family history.

Labor and delivery methods are discussed in a concise and thorough fashion. Forceps usage, breech deliveries, vacuum extraction, cesarean section, and related obstetrical analgesia-anesthesia matters are included. Many patients want advance information on the role of the midwife and the obstetrical team, as well as other matters such as circumcision, lactation suppression, and other postpartum matters.

This is an excellent book not only for the lay person, but also deserves a place on the doctor's book shelf as a resource for these timely matters.

Stewart J. Petrie, M.D.
Branford

Managing in an Academic Health Care Environment

Edited by William F. Minogue, M.D., 213 pp.
Tampa, Florida: An ACPE Publication, 1992. $50.
ISBN: 0-924674-18-0.

Health care organizations face ever increasing pressures to become more effective and efficient if they are to compete successfully and to survive in their current, highly dynamic environment. Academic health centers (AHCs), given their multiple and often conflicting responsibilities as service provider, research organization, and educational institution, especially need effective leaders and decision makers. Unfortunately, the effective administration of many academic health centers has been constrained by both the absence of professional management training within its leadership and a decision making culture that is "... frustrating and diffuse ... requiring the involvement of multiple and often competing advocates ... in a process that tends to be slow [and] based on negotiation, education, and compromise."

It is the need for this complex and frustrating process of decision making in a changing environment subject to often uncontrollable external and internal forces that this book seeks better to understand. Sixteen chapters provide general historical context about the mission and governance of academic health centers and examine a number of specific administrative issues facing those institutions now and into the future.

Given the basic and valid assumption underlying the book and the background of the individual authors, most of whom hold key administrative positions in AHCs and who often combine medical training with formal management education, this could have been an extremely valuable book. Unfortunately, its overall value is compromised significantly by several stylistic and editorial deficiencies.

For example, it is not clear just what is the intended objective of the chosen chapters. Is it merely to review the literature about what is known about a specific issue and then to speculate about possible implications for the AHC? Or is the objective to provide concrete guidance on appropriate structure and processes by which to organize the AHC's approach to this specific issue if it is properly to position itself in the likely future environment? Similarly, who is the intended audience? The excessive repetition of definitions and history, together with what will seem at times to the more experienced administrator to be overly simplistic and general discussions, suggests the audience might be "administrative newcomers" and/or those unfamiliar with the relevant behavioral and organizational literature. On the other hand, some chapters (notably that by DesHarnais and McLaughlin on "Clinical Quality, Risk-Adjustment and Outcome Measures") seem to expect the reader to have considerable knowledge of various methodologic issues and the terminology associated with that topic.

This confusion of intended purpose and audience—a topic not addressed in the preface or forward—leads to the incorporation at times of material that seems to have little relevance (although often of considerable side interest) in a book nominally focused on management. For example, a chapter by Nora and Reetz on "Legislation and the Academic Health Center" briefly summarizes federal legislation and policy, but its major conclusion is "that there is a congressional mandate for the existence of AHCs [but] relatively little legislation ... regulating AHCs" (p. 119). Similarly, a chapter by Cooksey and Hand on "Training Medical Managers at the AHC" is basically a review of a variety of management training programs offered by various institutions (other than AHCs for the most part) although it does include some suggestions on how some degree of management type training might be incorporated into the medical curriculum. Further, some articles seem overly redundant and/or without any clear rationale for their placement. For example, as part of their discussion (Chapter 5) of "Strategic Planning and External Market," Wilson and McLaughlin include a discussion of marketing principles. Then in Chapter 15, Miller et al provide a comprehensive review of "the process used by academic health institutions to determine the product or group of services they will develop and provide for their patients." This turns out to be a more in-depth discussion of the marketing process and its relationship to the overall strategic planning process. One wonders why the need for two chapters on essentially the same topic and, if needed, why so widely separated within the text.

These critical remarks notwithstanding, the book does have value as a "primer" to more narrowly trained physicians entering into leadership roles at any level of an AHC. Two chapters in particular stood out. Nora and Reetz, in a second chapter on Institutional and Professional Liability, suggest various quality assurance and credentialling processes useful in identifying and avoiding potential adverse outcomes associated with the service, research, and educational activities conducted by the AHC. Vegoda and Bria's extended discussion of information systems is a thorough introduction to what such a system should accomplish, for whom, and why; the technological and behavioral requirements of an effective system; and, alternate implementation strategies.

In summary, this book addresses an important concern which should be of vital interest to administrators and nonadministrators alike. However, it badly needed the sure hand of a good editor to realize its full potential.

John M. Glasgow, Ph.D.
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Dear Doctor:

According to the Centers for Disease Control, this coming winter may see an influenza epidemic because of the appearance of A/Beijing strain that has been circulating in other parts of the world. We have the tool at hand to prevent this from happening in Connecticut if we use it. I am, of course, thinking of the vaccine. Many of our patients do not consider a flu shot necessary or else are misinformed of its effectiveness. It is our job to educate them and promote or provide the vaccine.

This year for the first time Medicare will cover the influenza immunization, although at the time of writing the amount of the allowance is not known.

At the American Lung Association of Connecticut we consider our annual flu and pneumonia immunization campaign to be one of our highest priorities. As part of our FLU FREE '93 campaign we are offering a selectio of materials to help you reach those high risk persons and their household members. We also have a FLU FREE HOTLINE (1-800-332-LUNG) where the public can call to find out where they can get a flu shot in their town. If you would like to be listed as a provider of flu shots, please call the same number and ask to be includ on the list.

We have an opportunity and an obligation to be proactiv in this area. I hope that you and your office staff wil get flu shots and limit the spread of this potentially deadly illness to your high risk patients.

If you have questions, please feel free to call Ann Levison on the Hotline number.

Sincerely

Michael G Genovesi

Michael G. Genovesi, MD
President, American Lung Association of Connecticut

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For further information, call the American Lung Association of Connecticut at 289-5401 or 1-800-992-2263.

IN MEMORIAM

ALLARD, GILLES G., Laval University, Quebec City, 1950. Dr. Allard practiced at St. Joseph Medical Center where he was chief pathologist until he retired. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Allard died 23 April 1993 at the age of 70.

ELGOSIN, RICHARD B., McGill University, Montreal, 1940. Dr. Elgosin practiced in Hamden from 1946 to 1966 and was assistant health director for the town for many years. He was also director of the outpatient department at the Hospital of St. Raphael for eight years, staff physician at Gaylord Hospital for four years, and served as an emergency room physician at Charlotte Hungerford Hospital and Milford Hospital. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Elgosin died 2 March 1993 at the age of 77.

FRAKNOI, JOSEPH, Pazmany Peter University Medical School, Budapest, 1934. Dr. Fraknoi was chief of surgery at the Meriden Memorial Hospital from 1965 to 1970 and had an office in Wallingford which he opened in 1953. He was a member of the New Haven County Medical Association, the Connecticut State Medial Society, and the American Medical Association. Dr. Fraknoi died 30 March 1993 at the age of 82.

HERR, HERBERT H., Tufts Medical School, 1949. Dr. Herr established the dermatology department at the Grove Hill Medical Center in New Britain and practiced for 35 years until his retirement last fall. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Herr died 26 April 1993 at the age of 67.

HOWE, GEORGE O., University of Colorado Medical School, 1950. Dr. Howe was a former staff physician at the Newington Veteran's Hospital and the Rocky Hill Veteran's Home. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Howe died 13 April 1993 at the age of 73.

JAMES, LEWIS P., Yale University School of Medicine, 1927. Dr. James was a member of the obstetrics and gynecology department of St. Francis Hospital for 47 years, and served as president of the medical-surgical staff in the 1950's. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. James died 23 March 1993 at the age of 89.

LOCKHART, R. HAROLD, Yale University School of Medicine, 1928. Dr. Lockhart was a radiologist in private practice in Bridgeport and on staff at both Bridgeport Hospital and Danbury Hospital. He was a member of Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Lockhart died 25 March 1993 at the age of 90.

MOORE, WILBUR J., Columbia University College of Physicians and Surgeons, 1921. Dr. Moore was a general practitioner in Cheshire for 65 years. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Moore died 22 April 1993 at the age of 96.

MORRIS, FELIX R., University of Maryland School of Medicine, 1941. Dr. Morris was an ophthalmologist in Bridgeport for more than 40 years and served on the staff or St. Vincent's Medical Center. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Morris died 16 April 1993 at the age of 76.

NEIDLINGER, WILLIAM J., Cornell University, 1933. Dr. Neidlinger was former chief of Hartford Hospital's ear, nose and throat department. He was also associated with Newington Children's Hospital. He was a member of Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Neidlinger died 22 March 1993 at the age of 85.

ROSENBAUM, HASKELL M., University of Utah, 1948. Dr. Rosenbaum was a dermatologist in Waterbury. He was a member of New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Rosenbaum died in March 1993 at the age of 70.

RUSSELL, G. GARDNER, Harvard Medical School, 1919. Dr. Russell was the former chairman of the Department of Medicine at Hartford Hospital, and was affiliated with the hospital for 55 years. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Russell died 2 April 1992 at the age of 98.

VINCITORIO, JOSEPH A., Seton Hall, 1962. Dr. Vincitorio was staff president at St. Mary's Hospital. He was a family practitioner and former assistant state medical examiner. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Vincitorio died 26 April 1993 at the age of 64.

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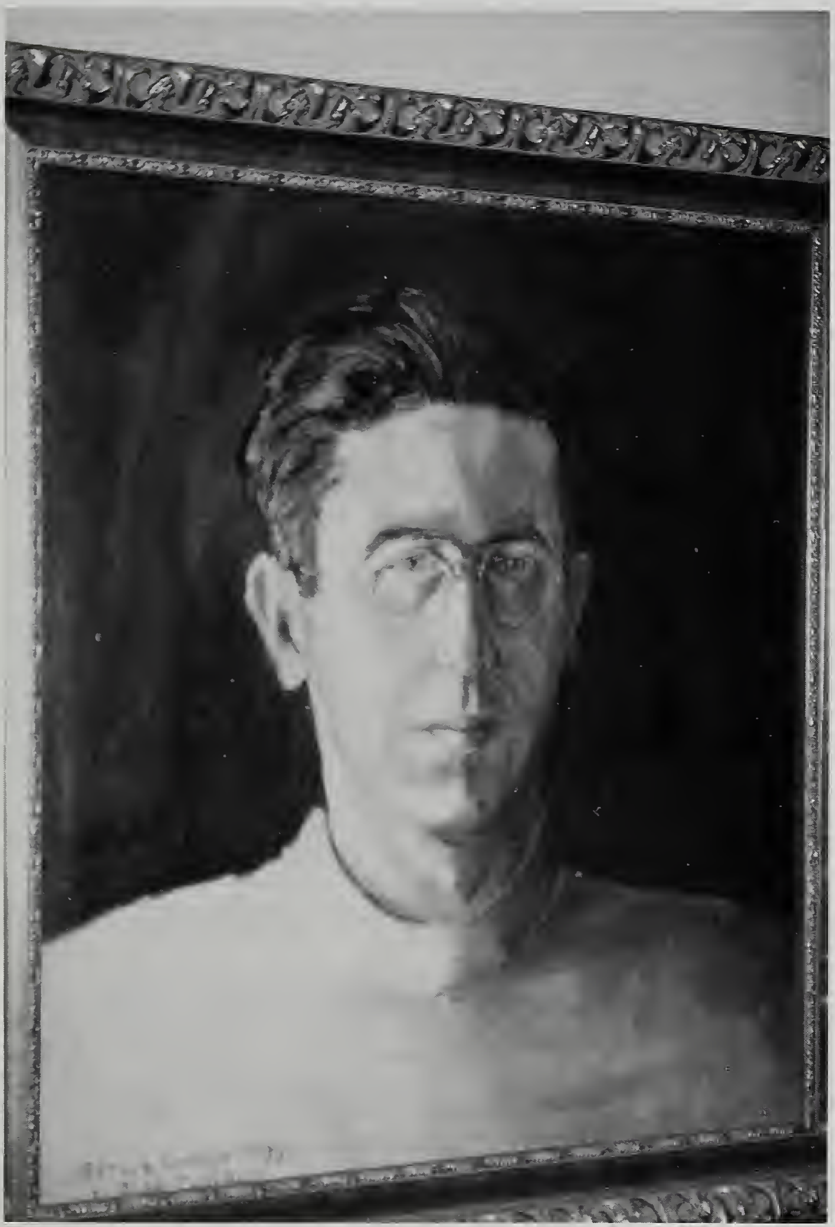

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Paroxetine: A New Serotonin Reuptake Inhibitor for the Treatment of Depression

TARA L. SHERMAN, M.D., CHRISTOPHER J. MCDOUGLE, M.D., AND LAWRENCE H. PRICE, M.D.

ABSTRACT—The introduction of the selective serotonin reuptake inhibitors (SSRIs) over the past several years has made a major impact on the treatment of depression and other neuropsychiatric disorders. Agents in this heterogeneous group of compounds are generally better tolerated and less toxic than the tricyclic antidepressants (TCAs), which they have in many respects superseded. This review summarizes available data on paroxetine, the newest SSRI to receive approval for the treatment of depression.

THIRTY years ago, it was shown that tricyclic antidepressants (TCAs) have the ability to inhibit the uptake of serotonin (5-hydroxytryptamine [5-HT]) in vitro.[1] From this and other observations evolved the hypothesis that 5-HT function might be deficient in depression and that antidepressant drugs might act to correct this deficit.[2] This hypothesis has fueled the development of antidepressants that target their actions more selectively and potently on 5-HT neurotransmission. The first of these selective serotonin reuptake inhibitors (SSRIs) to be released in the United States was fluoxetine (Prozac®) in 1988, followed in 1992 by sertraline (Zoloft®). Clomipramine (Anafranil®), a nonselective but potent tricyclic SRI, was released in the U.S. in 1990 for the treatment of obsessive compulsive disorder, and the SSRI fluvoxamine (Luvox®) is in late Phase III trials for the same indication. Paroxetine (Paxil®), which has been available since February 1993, is the newest SSRI to be approved by the U.S. Food and Drug Administration (FDA) for depression. It already is available in several European countries. This review will summarize data on the pharmacology, efficacy, adverse effects, and clinical usage of paroxetine, with particular reference to the other SSRIs.

Preclinical Pharmacology

Paroxetine, a phenylpiperidine derivative, has a chemical structure distinct from that of other antidepressants (Fig. 1). Numerous preclinical studies have confirmed that paroxetine is a potent and selective inhibitor of 5-HT uptake.[3-7] In rat brain synaptosomes, paroxetine is 23 times more potent than fluoxetine and five to seven times more potent than sertraline, fluvoxamine, and clomipramine in inhibiting 5-HT uptake.[8] Paroxetine also possesses a high degree of selectivity for the uptake of 5-HT relative to that of norepinephrine (NE) (320:1) and dopamine (DA) (1800:1). In contrast, the uptake selectivity ratio of fluoxetine in this model is 20:1 for 5-HT/NE and 170:1 for 5-HT/DA.[8] Like other SSRIs, paroxetine has low affinity for other CNS binding sites, including α1-, α2-, and, β-adrenergic, dopamine D2, histamine H1, 5-HTlA, and 5-HT2 receptors.[6,9-11] Extensive binding to these receptors is believed to mediate many of the adverse effects of the TCAs, such as sedation, drowsiness, weight gain, and hypotension. While paroxetine shows some binding to muscarinic cholinergic receptors, its affinity is many-fold less than that of TCAs.[6] The low affinity of paroxetine and other SSRIs for muscarinic receptors accounts for the low incidence of anticholinergic side effects (eg, dry mouth, constipation, blurred vision, urinary retention) associated with these drugs.

Clinical Pharmacology and Pharmacokinetics

Paroxetine is well absorbed orally and undergoes extensive first-pass metabolism by the liver.[12] Absorption is not affected by food or antacids.[13] Peak plasma levels are

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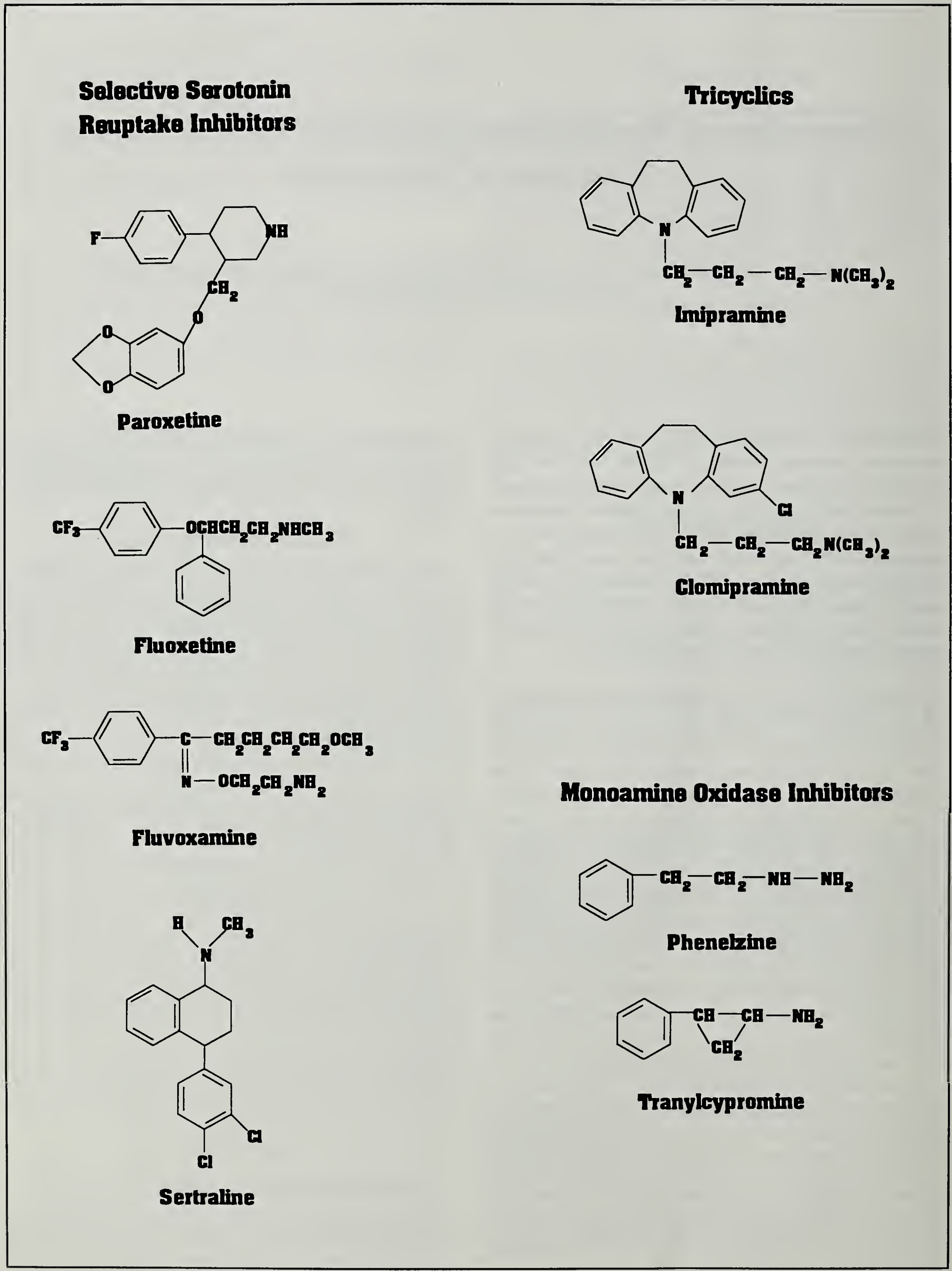
Figure 1.—Chemical Structures of Paroxetine and Other Selected Antidepressants.



achieved between three to eight hours after the initial dose. The other SSRIs also are well absorbed following oral administration and vary slightly in the time to reach peak plasma levels, with sertraline taking two to three hours longer than the others.[14] Like paroxetine, all the SSRIs undergo significant first-pass metabolism.

Paroxetine and other SSRIs are lipophilic and therefore have a large volume of distribution. All of these drugs are highly bound to plasma protein, with paroxetine's plasma protein binding estimated at 95%.[15]

As indicated, the SSRIs undergo extensive hepatic metabolism. Metabolism of paroxetine proceeds by oxidation followed by methylation and conjugation, with urinary excretion of most metabolites.[16,17] Unlike fluoxetine, and to a lesser extent sertraline, paroxetine's metabolites are devoid of effects on monoamine uptake.[17] The elimination half-life of paroxetine exhibits wide variability (range, 4-65 hours), with a mean of 21 hours. Steady-state is reached in approximately 4-14 days.[12,14,15] Comparable data for the other SSRIs are provided in Table 1.

Maximum plasma concentrations after single and multiple dosing schedules of paroxetine show wide variability; to date, there has been no demonstration of a correlation between plasma levels and either efficacy or tolerability.[15] This seems generally true of the other SSRIs as well, although there is some evidence that plasma levels of norfluoxetine, the active major metabolite of fluoxetine, are inversely correlated with antidepressant response to the parent compound.[18,19]

Efficacy

Paroxetine's efficacy as an antidepressant has been established in randomized double-blind trials in depressed outpatients. In three studies (total N=264) comparing paroxetine to placebo,[20-22] paroxetine (dose = 10-50 mg/day) showed significantly greater efficacy. Superiority was evident as early as the second week of treatment in two of these studies.[20,21] A fourth placebo-controlled study (N=66) showed no overall advantage for paroxetine, but did reveal greater improvement with paroxetine in a subgroup of patients whose illness had lasted for more than one year.[23] In a fifth study (N=47), trend differences favoring paroxetine over placebo did not reach statistical significance.[24]

Four studies (total N=480) have compared paroxetine with placebo and the standard TCA imipramine, used as an active control.[25-28] Paroxetine (dose = 10-50 mg/day) was more effective than placebo and at least as effective as imipramine in all cases. In one study, paroxetine was found to be superior not only to placebo but also to imipramine.[26] In another study, paroxetine's superiority to placebo was qualified by the lack of a difference between imipramine and placebo.[27] The results of these two studies appeared to reflect the poor tolerability of imipramine in these patient samples.

There has been some suggestion that paroxetine may be of particular benefit for anxiety symptoms in the context of depression. In one study, paroxetine was significantly better than placebo in reducing anxiety symptoms, but paroxetine was not significantly better than imipramine, and imipramine was not superior to placebo.[25] Feighner et al[26] found the anxiolytic effect of paroxetine to be significantly superior to both placebo and imipramine. Both of these studies achieved only modest doses of imipramine (averaging 110-170 mg/day). In contrast, Cohn et al[28] found both paroxetine and imipramine to be more anxiolytic than placebo, but paroxetine demonstrated an earlier onset of action. This earlier effect for paroxetine may be due to the fact that it can be started at its minimum

Table 1.—Clinical Pharmacokinetics and Dosage of Paroxetine and Other SSRIs.

Drug	Plasma $t\frac{1}{2}$ hours (mean)	Active Metabolites	Starting Dose mg/day	DoseRange mg/day
Paroxetine (Paxil™)	21	None	20	20-50
Fluoxetine (Prozac®)	48-72	Norfluoxetine ($t\frac{1}{2}$: 7-15 days)	20	20-80
Fluvoxamine (Luvox®)	15	None	50-100	100-300
Sertraline (Zoloft®)	26	Desmethylsertraline ($t\frac{1}{2}$: 66 hours)	50	50-200

effective dose of 20 mg/day, whereas imipramine must be started at low doses and gradually titrated upward to a therapeutic dose.

The efficacy and tolerability of paroxetine seem comparable to that of other SSRIs.[29] As is true for most of the SSRIs, the efficacy of paroxetine in the treatment of hospitalized depressed patients is not established. Such patients are often more severely ill than depressed outpatients, and may be more resistant to standard antidepressant treatment.

Adverse Effects

Since all antidepressants appear to be of roughly equivalent efficacy, side-effect profiles emerge as a major factor in drug selection. Like other SSRIs, paroxetine is well tolerated. Adverse effects may at times require a dosage decrease but rarely lead to drug discontinuation. Boyer et al[30] reviewed pooled data from worldwide clinical trials of various design on 4,126 depressed patients who received paroxetine. The most common adverse effects calculated from these data were nausea (23%), headache (18%), somnolence (17%), dry mouth (17%), insomnia (13%), asthenia (13%), sweating (12%), constipation (12%), dizziness (10%), and tremor (10%). The adverse effect most commonly associated with treatment termination was nausea, which occurred in 3% of the patients; nausea could often be managed by dose reduction. In several of the double-blind, placebo-controlled studies, nausea, diarrhea, somnolence, constipation, asthenia, and dry mouth occurred significantly more often with paroxetine than with placebo.[20-22] Nervousness occurred significantly more often with paroxetine in one of these studies.[21] In the another of these studies, no adverse effects occurred significantly more often with paroxetine than with placebo.[23]

In general, paroxetine was much better tolerated than imipramine.[25-27] Feighner et al[26] found the percentage of patients dropping out due to side effects to be 30% for imipramine, 10% for paroxetine, and 0% for placebo. In this study, paroxetine was most often associated with gastrointestinal distress and sedation, while imipramine caused anticholinergic side effects (dry mouth, constipation, and urinary retention). Poor tolerance for imipramine relative to paroxetine and placebo was also observed by Shrivastava et al,[27] who reported drop-out rates due to side effects of 45% for imipramine, 15% for paroxetine, and 14% for placebo.

Unlike the TCAs, paroxetine does not affect cardiac conduction and generally seems to lack clinically significant effects on the cardiovascular system.[12,31-34] Only minor and inconsistent changes in blood pressure and heart rate have been reported. Similarly, there is no consistent effect of paroxetine on the EEG, with no evidence to date that it affects the seizure threshold.[35]

In view of the high incidence of suicidal behavior in depressed patients, it is important when choosing an antidepressant to consider its potential lethality if taken in overdose. Boyer et al[30] described nine patients who overdosed with paroxetine alone and six who took paroxetine in combination with other drugs. The maximum paroxetine overdose was 850 mg, 17 times the maximum daily therapeutic dose. Although five of these patients were hospitalized, none had seizures or loss of consciousness. One patient had sinus tachycardia, but ECGs otherwise showed no consistent changes. All patients recovered fully. Although there have been suggestions that SSRIs may lead to the emergence or exacerbation of suicidal thoughts, there is no evidence that these agents represent any greater risk in this regard than the TCAs. Dunbar et al[36] found no difference between paroxetine, TCAs, tetracyclics, and placebo in the incidence of suicide attempts, although in the active therapies, suicidal thoughts tended to improve. Kapur et al[37] recently have replicated previous European epidemiologic studies in showing that the incidence of suicide attempts does not differ between the TCAs and the newer nontricyclics (ie, fluoxetine and trazodone), although death from overdose significantly is more likely with TCAs.

Drug Interactions

Paroxetine has few clinically significant interactions with most other drugs.[38] It may increase a bleeding diathesis when used with warfarin, despite normal prothrombin times. Cimetidine increases paroxetine blood levels by 50%, but this is usually of little significance. Like other SSRIs, paroxetine inhibits the hepatic cytochrome P_{450} system, so that blood levels of drugs metabolized by this route (eg, tricyclics, neuroleptics) may be increased. Paroxetine does not potentiate the sedatve or psychomotor effects of alcohol.[39]

Paroxetine should not be used in conjunction with monoamine oxidase inhibitors (MAOIs), since fatal reactions have been reported during concomitant use of other SSRIs and MAOIs.[40]

Use in Other Medical Conditions and in the Elderly

The increasing use of antidepressants in medically ill and elderly patients necessitates a clear understanding of the effects of these conditions on antidepressant pharmacokinetics. Doyle et al[41] studied the effects of renal function on paroxetine metabolism by categorizing patients into four groups on the basis of creatinine clearance, ranging from "normal"(>100 mL/min) to "severely impaired" (<30 mL/min). Following a single 30 mg dose of paroxetine, patients with increasing renal impairment tended to clear the drug more slowly, with a consequent increase in plasma concentrations and elimination half-life. In patients with severe impairment, the mean half-life was 50% longer than in the other three groups. This suggests that paroxetine should be started at low doses in such patients and cautiously titrated upward.

Krastev et al[42] investigated the pharmacokinetics of a single 20-mg dose of paroxetine in 12 patients with biopsy-confirmed liver cirrhosis. The time to reach maximum plasma concentrations was slightly reduced in these patients, but other parameters did not differ from healthy controls. Unfortunately, the clinical relevance of both this study and that of Doyle et al[41] is limited by the use of single, rather than repeated, doses.

Drug pharmacokinetics are known to change in the elderly, who additionally tend to be more sensitive to side effects. The elimination half-life and steady-state concentrations of paroxetine tend to be higher in the elderly than in younger patients.[36,41-45] While acknowledging considerable intersubject variability, Lundmark et al[44] found that the half-life of paroxetine in patients aged 60-75 years who received 20-30 mg for seven weeks was higher than that in young adults receiving 30 mg (38 hours *vs* 21 hours); steady state concentrations were similarly higher (80 ng/mL *vs* 36 ng/mL). In comparing patients <65 years with those >65 years during six to nine weeks of paroxetine treatment at various doses, Hebenstreit et al[43] observed that steady-state levels were significantly higher in the older patients at daily doses of 30-40 mg, but not at 20 mg. Although there has been no correlation between paroxetine plasma levels and the emergence of adverse events or therapeutic efficacy, it is suggested that treatment for geriatric patients be initiated at 10 mg/day with titration as clinically indicated to a maximum of 40 mg/day.

A significant number (N=693) of patients aged > 65 years participated in the studies leading to paroxetine's approval. Analyses show no differences in efficacy or safety between elderly (> 65 years) and younger (< 65 years) patients.[43]

Dosage

The starting dose of paroxetine is 20 mg once a day. Most patients will typically respond to this dose. If there is no improvement after several weeks, the dosage should be increased in 10 mg increments to a maximum of 50 mg/day. Patients appear to tolerate higher doses of paroxetine after titration than when treatment is initiated at a high dose.[46] Anecdotal reports suggest that patients who experience gastrointestinal complaints early in treatment may benefit from taking paroxetine with food. It may also be beneficial for sleep improvement to take the dose in the morning, although the occurrence of daytime somnolence should be managed with evening dosing. Paroxetine's pharmacokinetics suggest that it can be given once a day, but additional clinical experience is needed to determine whether this is more likely to cause limiting side effects, particularly at higher doses.

Other Indications

Controlled trials of other SSRIs have shown efficacy in obsessive-compulsive disorder, bulimia, and panic disorder, with more preliminary evidence of efficacy in autism, alcoholism, posttraumatic stress disorder, social phobia, trichotillomania, and sexual paraphilias.[47] The efficacy of paroxetine in these conditions is not known, although clinical investigation of paroxetine's efficacy in obsessive compulsive disorder and panic disorder are underway.

Conclusion

Paroxetine appears to be as effective as the TCAs in the treatment of outpatients with depression, but with a more favorable side-effect profile and less toxicity in clinical use and in overdose. In these respects, paroxetine seems similar to other SSRIs that have either recently been, or are soon to be, released. Of the approved SSRIs, paroxetine has the shortest half-life and no active metabolites, but the clinical significance of this is not established.

The accrued experience with the SSRIs suggests that they should now be considered first-line agents in the outpatient treatment of depression.[2] Further experience should clarify the clinical significance of features differentiating paroxetine from other agents in this class, as well as its efficacy in the treatment of other neuropsychiatric disorders believed to respond to these agents.

Acknowledgements

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Rhabdomyolysis and Renal Failure Secondary to Combination Therapy of Hyperlipidemia with Lovastatin and Gemfibozil

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Introduction

IN recent years, much emphasis has been placed on lowering serum cholesterol as a means of reducing the risk of coronary artery disease. The results of the Lipid Research Clinics Trial,[1] the Helsinki Trial,[2] the Coronary Drug Project, and the Lovastatin Study Group[3] have conclusively demonstrated that the risk of coronary artery disease can be substantially reduced by lowering the total cholesterol. Lowering the LDL cholesterol and raising the HDL cholesterol can further decrease the risk of coronary artery disease. Many Americans are well informed about the long-term benefits of having a favorable cholesterol profile, and, therefore, have often requested medication when diet has not reduced their total cholesterol value below 200 mg/dL. As a result, physicians have prescribed many more cholesterol-lowering agents over the past five years. Some patients receiving these drugs are on multiple-drug regimens, and most have had no serious complications. However, the concomitant use of lovastatin (Mevacor®) and gemfibrozil (Lopid®) has been associated with severe myopathy, rhabdomyolysis, and renal failure in 5% of patients on this combination.[4] Even though the FDA documented 12 such cases by 1990[5] and warnings appear in the PDR under both drugs, many physicians are unaware of the interaction and still prescribe this combined regimen. Furthermore, there are reports in the literature that support treating noninsulin dependent diabetic patients who have marked hyperlipidemia,[6] and patients with familial combined hyperlipidemia,[7] with the combination of lovastatin and gemfibrozil.

Case Report

The patient was a 64-year-old white male with a history of hypertension, multiple myocardial infarctions, coronary bypass surgery, and hyperlipidemia who presented with severe myalgias and muscle weakness. He had been treated with lovastatin 60 mg daily and niacin 500 mg daily for many months without improvement in his cholesterol profile. Approximately four weeks prior to the onset of his symptoms, he began taking gemfibrozil 600 mg twice daily. His physician continued the lovastatin and niacin at the previous dosages. After two to three weeks on this combination, the patient noticed increasing fatique, muscle aches, and generalized weakness. During the three days prior to admission, he had been unable to get out of bed without the help of his wife, and had begun to experience severe nausea and anorexia.

On presentation to the office, the patient was pale and so weak he needed assistance getting onto the examination table. His vital signs were normal. Pertinent physical findings included decreased breath sounds at both lung bases, a midsternal surgery scar, regular heart rhythm with a faint systolic murmur, and marked muscle weakness in all extremities with an otherwise normal neurological examination. Urinalysis showed 3+ blood on the dipstick but no red blood cells on microscopic analysis. The patient was admitted to the hospital, and intravenous fluids were administered.

Laboratory tests showed white blood cells 14,000, hemarocrit 38%, sodium 127 mmol, potassium 5.5 mmol, blood urea nitrogen 94 mg/dL, creatinine 5.6 mg/dL, CPK 317,120, SGOT 4,119, SGPT 1,501, calcium 7.5, phosphorous 8.6, and serum myoglobin in excess of 1,250. Urinalysis showed coarse granular casts, 3+ blood, and an

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occasional red blood cell. His chest film was normal and the electrocardiogram showed evidence of an old infarction.

The patient became oliguric and his creatinine increased to 7.7 with a blood urea nitrogen of 109 mg/dL. Hemodialysis was initiated on the third hospital day because of the rapid deterioration in his renal status, increased fluid retention, and a serum potassium approaching 7.0 mmol. His nausea, myalgias, and weakness improved slowly with dialysis. His CPK decreased from a peak of 357,900 to 2,196 by the 10th hospital day. After his fifth dialysis treatment, the patient's urine output increased to greater than 1.5 liters per day, and he was discharged on the 15th hospital day. His serum potassium stabilized at 4.5 mmol and his hematocrit at 29%. At discharge, his blood urea nitrogen was 117 mg/dL and his creatinine was 9.9 mg/dL.

The patient gradually improved at home, and after four weeks, his blood urea nitrogen had declined to 25 mg/dL and serum creatinine to 1.1 mg/dL. His hematocrit was 40%. However, the cholesterol was 303 mg/dL and the triglycerides were 206 mg/dL. After three months of dietary management, his cholesterol was still 300 mg/dL and cholestyramine was prescribed. At this time, he has recovered completely, and his cholestyramine dosage is being adjusted.

Discussion

Lovastatin has been available in the United States since September 1987, and because of its efficacy in lowering cholesterol and its minimum side effects, many physicians have prescribed this drug. The incidence of myopathy in patients taking lovastatin alone has been reported at 0.5%,[8] however, when used in combination with gemfibrozil or among patients receiving immunosuppressive agents, some have developed rhabdomyolysis and renal failure. Myopathy and rhabdomyolysis were reported in 17 (0.04%) of 4,000 patients treated with lovastatin in one large trial.[8] Of these 17 patients, six were on gemfibrozil, two were on cyclosporin and gemfibrozil, and two were receiving niacin; however, six were being treaded with lovastatin alone. If patients received lovastatin, gemfirozil, and cyclosporin concomitantly, the risk of severe myopathy increased to 28%.[9] The package insert now warns of a 30% risk of myopathy in patients taking immunosuppressives and lovastatin and a 5% risk in those receiving gemfibrozil and lovastatin. A 10 mg lovastatin pill is now available for those hyperlipidemic patients receiving immunosuppressive therapy. This situation may particularly apply to renal transplant patients.

The mechanism of injury remains unclear. Muscle biopsies show atrophy, mononuclear cell infiltrates, muscle cell necrosis, and other changes consistant with polymyositis.[10] The active metabolites of lovastatin were elevated in the serum of the immunosuppressed patients but not in those taking gemfibrozil.[8] These observations suggest a complex interaction between lovastatin and a few other drugs that increases the potential myotoxic effect of the drug. Fortunately, all patients recovered after the drugs were discontinued, and those patients requiring acute hemodialysis did not require chronic dialysis.

Conclusion

Lovastatin is a highly effective drug in reducing serum lipid levels and will undoubtedly be prescribed by more physicians as the American public becomes more conscious of the effect of elevated cholesterol levels. Because hyperlipidemia often occurs after heart or kidney transplants, it is likely that there will be increased usage in immunosuppressed patients. For those patients on lovastatin with triglycerides in excess of 600, there will be a temptation to add gemfibrozil. Information should be disseminated to physicians that lovastatin used in combination with immunosuppressive agents and gemfibrozil can cause severe rhabdomyolysis and life-threatening renal failure. When such drug combinations must be utilized, patients should be maintained on the lowest possible dosage and their CPK levels closely monitored. The only other potential use for combined lovastatin-gemfibrozil therapy would be in NIDDM patients with severe familial combined hyperlipidemia where the LDL and triglyceride levels are extremely high and the HDL levels quite low. Once again, these patients must be closely monitored due to potential rhabdomyolysis and renal failure.

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Abstracts of Papers

AMERICAN COLLEGE OF PHYSICIANS, CONNECTICUT CHAPTER

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FORWORD—The American College of Physicians, Connecticut Chapter, held its annual Scientific Meeting on October 1992. Papers selected for presentation as well as posters are abstracted below.

Proposal for a New Mechanism of the Bisferiens Pulse

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A bisferiens pulse is characterized by two systolic peaks separated by a distinct midsystolic dip. It occurs in conditions in which a large stroke volume is ejected rapidly from the left ventricle. This pulse is commonly observed in patients with pure aortic regurgitation, combined aortic regurgitation and stenosis, patent ductus arteriosus, and hyperkinetic circulatory states.

There is no satisfactory explanation at present for the mechanism of the bisferiens pulse. Katz et al (1972) proposed that the midsystolic dip is due to the suction effect of the high-velocity stream of blood entering the aorta (Venturi effect). These theories have never been convincingly demonstrated.

We have applied the concept of momentum to volume, flow, and pressure in the heart. The ventricle was modeled as having both static and variable (dynamic) mass. A new cardiovascular differential equation was derived:

$$L_1\, d^2V/dt^2 + L_2(dV/dt)^2 + R\, dV/dt + V/C + -dP$$

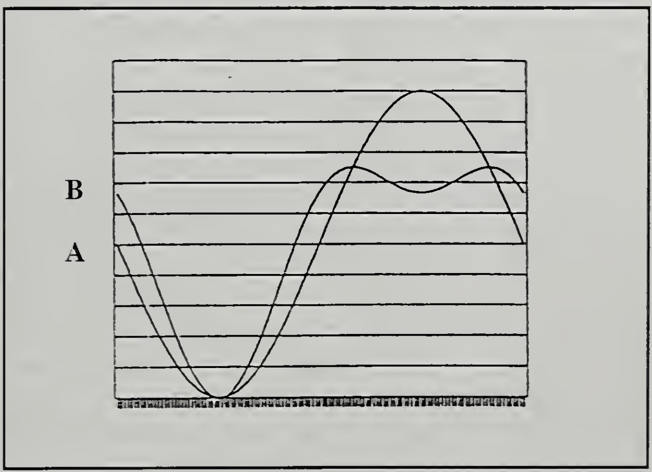
V = volume, dP = pressure gradient, L_1 and L_2 = mass, R = peripheral vascular resistance, C = compliance

Figure 1 shows computer-generated pulse pressure curves based on the solution of this equation in:

A) a ventricle with no variable mass,

B) a ventricle with significant variable mass (bisferiens pattern).

Figure 1



A New Graphic System Improves Physician Accuracy in the Diagnosis of Single, Double, and Triple Acid-base Disorders

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A new hand-held graphic system was developed for conjoint interpretation of arterial blood gases and serum electrolytes in the diagnosis of simple and mixed acid-base disturbances. The system combines a revised acid-base map and an electrolyte map to produce a table of diagnostic choices. The electrolyte map is a new device that graphically represents relationships between Na^+, Cl^-, total CO_2 content, and the anion gap. When used in combination with the acid-base map, the system identifies 46 categories of acid-base disturbances and 32 areas of incompatible blood gases and serum electrolytes. This system was evaluated by two methods. Fifty acid-base problems, representing simple and complex disorders, were analyzed by the graphic system and gave 100% concordance with authoritative references. Resident physicians in internal medicine (n = 51) were then randomized between a traditional method of diagnosing acid-base disturbances and the graphic system. Each subject was given a test containing five single, five double, and five triple disorders from the 50 acid-base problems. The correct response rates using the traditional method were 72%, 52%, and 16% for single, double, and triple disorders, respectively. Using the graphic system, the correct response rate was 88% for single disorders, 94% for double disorders, and 94% for triple disorders ($P < 0.01$ for each). The study suggests that this graphic system is a practical and precise diagnostic aid in the clinical evaluation of acid-base disorders.

Frequency and Extent of Coronary Artery Calcifc Deposits in Men Between the Ages of 81 to 90 Years

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The extent of coronary artery calcific deposits increase with severity of luminal narrowing by atherosclerotic plaque. The significance of this relationship, however, decreases with age so that an increasing number of segments of the major epicardial coronary arteries with insignificant luminal narrowing may show deposits of calcium. In 10 men (aged 81 to 90 years, mean 83) with fatal coronary artery disease, the four major epicardial coronary arteries were cut at 5-mm intervals. The degree of cross-sectional area narrowing (0-25%, 26-50%, 51-75%, 76-95%, and 96-100%, stenosis scores 0 to 4) and amount of calcific deposits (0 to 4) were assessed histologically in each of the 492 five-mm segments. An average of 2.9 out of four coronary arteries were narrowed more than75% in cross-sectional area by plaque in the 10 men, and 59% (289/492) of the 5-mm segments showed calcific deposits (Table 1). Stenosis and calcium scores were higher in the proximal portion of the coronary arteries (2.0 and 2.1) compared to middle (1.7 and 1.8) and distal (0.9 and 0.7) portions.

Table 1.—Relation of calcium to narrowing in the coronary arteries.

	Percentage of cross-sectional area narrowing by atherosclerotic plaque				
	0-25%	26-50%	51-75%	76-95%	96-100%
Number	112	121	164	76	19
+Calcium	2%	54%	82%	92%	95%

Thus, although calcific deposits are present in 93% (88/95) of significantly narrowed 5-mm segments of the major epicardial coronary artieris of men 81-90 years of age with fatal CAD, a significant percentage (201/397 = 51%) of 5-mm segments with insignificant luminal narrowing also show calcific deposits.

Tetanus—A Reemerging Syndrome in the Elderly

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The syndrome of trismus, dysphagia, laryngospasm, generalized muscle spasms, and opisthotonos is diagnostic of tetanus. Since the advent of vaccination this syndrome has become rare in the U.S., but tetanus remains a common and potentially lethal disease in underdeveloped countries where access to health care is limited. Of note, the Centers for Disease Control and Prevention serologic survey data reveal that many elderly persons in the U.S. lack protective serum antibody levels against tetanus toxin. Elderly females are even more likely to have nonprotective antibody levels than are elderly males, who more frequently receive a primary vaccination series or booster in adulthood, eg, at the time of induction into military service. We report a case of tetanus occurring in a healthy elderly female following a trivial injury.

A 74-year-old healthy white female presented to the emergency room with a five-day history of jaw pain. The patient gave a history of minor trauma to her left leg in the garden one week before onset of symptoms. She had sought no treatment at that time. She stated she had not received any vaccinations for over 50 years. She was found to have lockjaw and to be in atrial fibrillation, which converted with medical treatment. Her symptoms progressively worsened with increasing jaw stiffness, pain, and dysphagia. Physical examination revealed temperature, fever 38°, risus sardonicus, and tenderness and spasm of the trapezius and sternocleidomastoid muscles bilaterally, with limited range of motion in all directions. The abdomen was obese, nontender with moderate spasm of the rectus abdominis muscles, and normal bowel sounds. A well healing 2 cm diameter circular skin lesion was noted on the left lower extremity 6 cm above the medial malleolus. On neurologic examination, the patient was alert and oriented; cranial nerves were intact except for inability to open her mouth; deep tendon reflexes's were hyperactive bilaterally throughout; and muscle strength was normal with tone increased bilaterally throughout. Except for a moderate leukocytosis, the laboratory data were noncontributory. Her serum calcium was normal. Her condition deteriated because of generalized muscle spasms. Tracheotomy was necessary; muscle relaxation was obtained by use of vecuronium bromide and midazolam. Wound cultures showed growth of aerobic bacillus. Serum antitetanus antibody was zero. The diagnosis of tetanus was made. She was treated with wound debridement, metronidazole, and intramuscular tetanus immunoglobin. Over the next two weeks she slowly improved, and was discharged with plans for a primary immunization series to protect her in the future.

We conclude: 1) In the U.S., tetanus should still be considered in the differential diagnosis of trismus and generalized muscle spasms, especially in the elderly or any adult with an unknown or negative history of receiving a series of tetanus immunization or a history of last booster more than five years before primary injury. 2) History may reveal trivial trauma, for which the patient did not seek treatment. 3) In the U.S., the elderly, particularly women, are at increased risk for tetanus, and careful attention should be given to updating their tetanus immunization status.

Asthma Admissions from the Danbury Hospital Emergency Room

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We recently evaluated the number of patients seen in our emergency room and those admitted to the hospital with a diagnosis of asthma over the past three years. Assuming that the.diagnosis is correct, and that the most representative age group for asthma is the six to 45.year group, we note that there has been a significant increase in the number of admissions over the study period.

When this group is age stratified, we observe that the change is almost entirely due to increased admissions in the six to 15 year age group. Our management of asthma has not changed significantly over this study period; we stopped routine use of aminophylline prior to this period. We speculate that this increase in admissions may be due to economic factors which result in delay in obtaining adequate health care in this age group, resulting in more severe asthma exacerbations on presentation to the emergency room. Further study is warranted.

Percentage Admissions

Age Group	1989	1990	1991	P-Value (89-91) (χ square)
6-15	10	10	20	<0.01
16-45	12	13	13	N.S.
6-45	12	12	15	0.09

Metastatic Adenocarcinoma Presenting as Fulminant Hepatic Failure

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Malignancy is an uncommon cause of fulminant hepatic failure. We wish to report a patient who presented with a rapidly progressive course of fulminant hepatic failure secondary to metastatic cancer.

The patient was a 57-year-old female who had previously been in good health. She presented with a two-week history of malaise, jaundice, and anorexia. She had noted abdominal distention, peripheral edema, and severe, generalized weakness. On examination she was confused, icteric, with Kaussmaul-type respiration. Her blood pressure was 80/32 mm Hg, her liver span was 15 cm by percussion, and she had peripheral edema.

Laboratory evaluation revealed the following: serum glucose, 33 mg/dL, blood urea nitrogen, 93 mg/dL, serum creatinine, 4.4 mg/dL, total serum bilirubin, 25.1 mg/dL; direct serum bilirubin, 22.8 mg/dL; prothrombin time, 16.4 seconds. Computerized axial tomography of her abdomen revealed ascites and multiple low density lesions in the liver. Liver biopsy showed adenocarcinoma. Over the next four days after admission, the patient continued to require pressor support and she remained oliguric. Her severe coagulopathy persisted and she developed hemorrhage of the gastrointenstinal tract. Despite resuscitative efforts, the patient expired.

Fulminant hepatic failure is characterized by liver dysfunction with coma, and is complicated by hypoglycemia, coagulopathy, sepsis, oliguria, and cerebral edema. Common causes include the viral hepatitis and toxins. Our patient had fulminant hepatic failure with a rapidly downhill course. This case is unusual in both the etiology and rapid progression of fulminant hepatic failure.

A Case of Rapidly Reversed Locked-in Syndrome Following Correction of Severe Hyponatremia

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A 75-year-old female with a history of hypertension and carotid artery disease, status post endarterectomy, presents with a serum sodium concentration of 106 meq/L following three days of nausea and excessive water intake. The hyponatremia was corrected with minimal administration of nonmal saline to a concentration of 128 meq/L over a 24-hour period. At 36 hours, the patient rapidly developed a locked-in state with near complete quadriplegia. She remained conscious and able to communicate appropriately by eye movements only. This condition completely reversed itself within a 10-hour period. Computed tomograph and magnetic rsonance imaging scans of the head as well as carotid ultrasound and transcranial artery Doppler studies were negative.

This case illustrates an interesting diagnostic dilemia. A locked-in state is usually the result of a vascular insult to the pons. This case may be explained by a transient ischemic attack involving the vertebral basilar distribution. Another possible etiology may involve a condition similar to central pontine myelinolysis (CPM). The relationship between CPM and the correction of hyponatremia remains unclear and this clinical picture suggests an early reversible central nervous system lesion which may precede the development of CPM.

Hysterectomy—The Second Most Common Major Surgery

About 590,000 hysterectomies are performed each year in the United States, with annual hospital costs exceeding $5 billion. By age 60, over one-third of U.S. women have had a hysterectomy. After cesarean-section, hysterectomy is the second most frequently performed major operation in the United States.

Hysterectomy rates vary considerably according to geographic, demographic, and physician-related factors. Women who live in the southern and midwestern areas of the United States are more likely to have hysterectomies, as are African-American women and women who have male gynecologists, according to Karen J. Carlson, M.D., author of a newly published review article on indications for hysterectomy.

Uterine leiomyomas (benign uterine tumors or fibroids) account for 30% of hysterectomies. When leiomyomas cause bleeding, pelvic pain or pressure, or refractory anemia, hysterectomy may be warranted. However, alternatives such as hysteroscopic myomectomy (surgical removal of leiomyomas) are becoming increasingly available, report Dr. Carlson and her colleagues at Massachusetts General Hospital and Harvard Medical School.

Another 20% of hysterectomies are performed because of endometriosis, the presence of uterine lining tissue in other pelvic sites, that can result in cysts, adhesions, and menstrual pains. The number of hysterectomies for this condition has been increasing in recent years. The researchers recommend that hysterectomy be performed only when conservative medical (for example, hormonal suppression) or surgical (excision of lesions) approaches fail, when there is concern about side effects of long-term hormonal suppression such as osteoporosis, or when endometriosis is located within the myometrium (smooth muscle layer of the uterus).

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Important Advances in Clinical Medicine

Plastic Surgery

The Council on Scientific Affairs of the California Medical Association presents the following inventory of items of progress in plastic surgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of these items of progress in plastic surgery that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Plastic Surgery of the California Medical Association, and the summaries were prepared under its direction.

Face-lift and Blepharoplasty

SUBSTANTIAL improvements in the postoperative results of face-lift procedures have been made over the past five years. This is primarily because of advances in the understanding of facial anatomy and the application of craniofacial surgical techniques. Problems of the lower face, including jowling and redundant neck skin, fat, and muscle, have been virtually eliminated with extensive subcutaneous undermining, platysmal plication or resection, superficial musculoaponeurotic system operation, and the direct or indirect removal of abnormal fat deposits of aging. Many problems of the upper face have also been eliminated with various techniques of brow lifting through a coronal or forehead hairline incision. Levels of brow-lift dissection have been successful at the subcutaneous, supragaleal, or subgaleal planes with varying amounts of forehead muscle resection to eliminate vertical frown lines at the root of the nose and transverse forehead lines above the eyebrows. Superior repositioning of the eyebrows not only corrects the descent that occurs with aging, but also gives a dramatic improvement to the hooding and redundancy of upper eyelid skin that was ineffectively and inappropriately treated with blepharoplasty in the past. The remaining challenge is to rejuvenate the central third of the face, including the nasolabial folds and malar pouches that descend with age.

One approach to the middle third of the face has been to dissect at the subperiosteal level, freeing all tissues from the zygoma, zygomatic arches, maxilla, and nose. In this subperiosteal face-lift, after these areas are widely undermined and fascia detached from their insertions, the deep structures are repositioned superiorly, suturing midfacial soft tissues to the temporalis fascia. While this technique appears to improve the midcheek and malar regions, there is little nasolabial fold improvement. This type of "craniofacial face-lift" is also an extensive procedure and can have the complication of paresis of the frontal branch of the facial nerve. Another approach is to extend the dissection from the face-lift anteriorly to the nasolabial fold and defat the fold directly. Possible complications, including devascularization of the face-lift flap, hematomas, and nerve damage, do not appear to be substantial. Another similar procedure takes the platysma muscle, the cheek fat of the midface, and the orbicularis muscle as a single composite flap and elevates it out to the nasolabial fold with less emphasis on removing nasolabial fat. This technique has been used since 1990 with good results and no orbicularis oculi motor dysfunction. Other techniques to address the nasolabial fold have included liposuction, fat curettage under direct visualization, and resection of the levator labii superioris alaeque nasi muscle. Continued evaluation of all of these techniques, used with the proper indications, should overcome the

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final barriers to complete facial rejuvenation.

A precise diagnosis of eyelid deformities is critical to obtain superior results with the many approaches now available for eyelid restoration. Upper blepharoplasty analysis involves examining the forehead for possible descent, the eyebrow and upper orbital region soft tissues, the eyelid skin, orbicularis muscle redundancy, and periorbital fat. Removing heaviness and bulkiness in the lateral upper orbital region may involve resecting fat behind the orbicularis oculi superficial to the usual retroseptal areas of fat resection. Bony contouring of the orbital rim may also be appropriate with craniofacial techniques. Access to medial orbital fat compartment through a coronal incision during a brow lift, without any external incision on the eyelid, has been recently described. Lower blepharoplasty without incisions, known as transconjunctival lower lid blepharoplasty, is also gaining popularity. Although originally indicated for younger patients with isolated fat prominence and little skin redundancy, it is increasingly found to give good results in older patients with moderate perceived skin excess. Only fat is resected through a division of the conjunctiva and capsulopalpebral fascia of the everted lower lid; however, it appears that the change in contour of the skin of the lower lid uses up the apparent excess. The result is a smooth lower eyelid without bagging. Although transconjunctival blepharoplasty has gained in popularity in the past several years and is thought by some to prevent the occurrence of lower eyelid ectropion, reports are starting to surface of complications including ectropion, entropion, and diplopia. Some surgeons are starting to combine transconjunctival blepharoplasty with a chemical peel of the eyelid skin to correct fine wrinkling. For a lax lower eyelid that may be prone to retraction postoperatively, numerous procedures to fix the lateral canthus or lateral tarsal border of the lower eyelid to the lateral orbit have substantially improved surgical results. Tarsal suspension or fixation procedures are also gaining acceptance to improve results in lower eyelids with normal tone. No evidence currently exists to support a benefit of laser blepharoplasty over conventional techniques.

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Coverage of Burn Wounds

CLOSURE of thermally injured wound beds remains the main challenge of a pediatric burn team because a patient's survival depends on successful wound closure using viable, permanent skin. Burns of as much as 40% of the total body surface area can be easily covered with sheet or meshed autografts in a set of serial excisions and grafting procedures. Injuries covering as much as 70% of the total body surface area usually require the addition of a temporary skin coverage material while waiting for donor sites to repopulate or for deep dermal areas to epithelize. Traditionally these temporary materials have included porcine xenograft, cadaveric allograft, and biosynthetic material, each of which has various disadvantages, such as expense, short shelf life, and viral disease transmission.

Closing the extensive wounds of patients with burns of greater than 70% of their total body surface area is problematic. It now appears that the use of cultured skin grafts is feasible for the timely closure of wounds in patients with massive burns.

When a patient is admitted to the burn unit, a sterile skin biopsy is taken from an unburned area of skin and transported to a skin bank. Many burn centers are affiliated with a local skin bank, and others use commercial companies to grow skin. The skin is then processed by a variety of tissue culture techniques until the desired quantity of skin is grown in culture flasks. As much as a 10,000-fold increase in skin can be grown from a single 2-cm^2 biopsy specimen over about three weeks. During this time the patient undergoes serial debridements and, where possible, coverage of the wound with repeated harvesting of available autogenous tissue. Cadaveric or synthetic skin is then used to cover the remaining areas until the cultured skin is ready.

When the patient is stable and the wound bed is noninfected, the cultured skin is transferred to the patient and placed on the wound bed in a manner similar to autograft placement. Postoperative nursing care is slightly more intensive, requiring the patient to be kept sedated, and may even delay a return to normal rehabilitation activities. The rate of "take" of the skin grafts in part varies with the familiarity of the surgical and nursing staff with the technique but is reported to be nearly 80% under ideal conditions.

Unfortunately, there are still many problems associated with this grafting technique. When the cultured cells consist of only epidermis, the graft is thin and fragile. If it is not placed onto a dermal bed, it has not been shown to form rete pegs, anchoring fibrils, or a basement membrane, and patients have problems with increased fragility, blister formation, and shear. This has necessitated repeated grafting with either more cultured skin or autologous tissue. The cultured skin seems to be hardier when it is placed onto a dermal bed, either an unexcised dermal wound base or an allograft dermal base that has been previously placed on the wound bed and allowed to vascularize.

Substantial cost is associated with this technique (between $1,000 and $9,000 per each percentage of body surface area covered), and the length of hospital stay is increased. Long-term results with scarring are still undergoing evaluation. Research on this technique is ongoing, and cultured skin grafting will eventually become routine as another method for achieving timely wound closure for patients with massive burns.

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Wrist Pain

WRIST pain is a challenging diagnostic dilemma. Most patients with wrist pain come to a hand surgeon after a series of failed conservative measures and a battery of unrevealing studies.

As with any evaluation, the history is the single most important feature. If obvious injury is excluded, then careful questioning must include the patient's occupation and any daily repetitive tasks. While the wrist may be the focus, the entire upper extremity from the neck to the fingertips must be included in the examination. Even the most trivial and seemingly unrelated activity may give important clues to the nature of the problem. For this reason, several visits to the physician may be necessary.

Several large categories can be excluded by the physical examination. The key is to determine whether the disorder is in the soft tissues or the bony and ligamentous elements. The patient will often refer to a deeper pain when describing maladies of the latter; soft tissue problems are usually palpable. At several points in the examination, it is useful to refer to the uninvolved side when making judgments about range of motion, color, perfusion, position, swelling, and strength.

A few key tricks to localize pain are helpful. Palpation of each wrist bone is mandatory. Grinding the metacarpals and the radius and ulna against the carpals and noting pain or grinding sensations can give clues to degenerative changes. Also, any excessive laxity or instability with crepitus when going through full ranges of motion (compared with the uninvolved side) can give clues to ligamentous tears or disruptions. In addition, it is important to stress each extensor compartment to rule out tendinitis. On the flexor aspect, tests for Phalen's and Tinel's signs should be done to rule out carpal tunnel syndrome.

Confirmatory roentgenograms are the next step in management. They must include all four views—lateral, semipronated oblique, posteroanterior, and scaphoid—including comparative views of the uninvolved side. Accurate communication between the radiologist and the physician must be maintained to avoid overinterpreting the results. In addition, the investigator must critically review the x-ray film because even simple supination and pronation of the forearm will change spatial relationships in all of the articulating surfaces of the carpal bones.

Nerve conduction studies can give clues to compression syndromes masquerading as wrist ailments and should be done early to exclude nerve compression before expensive and lengthy radiologic scans are undertaken.

The next tier of testing frequently begins with bone scanning. Fractures may be evident by increased uptake after only 48 hours. A normal scan, especially if taken a week after injury, should show that a bony injury is absent. Scans can give clues to local or diffuse degenerative disease. If they also reveal ligamentous injury, arthrography or arthroscopy should be done. Computed tomography and magnetic resonance imaging are the next level of study. Magnetic resonance imaging is most useful in diagnosing marrow abnormalities such as avascular necrosis of the lunate, and computed tomography is useful to detect soft tissue and bony masses.

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Cleft Lip and Palate and Craniofacial Operation

THE surgical correction of craniofacial deformities has advanced swiftly over the past few decades. The goal remains constant: rehabilitate these patients to a normal appearance.

The pioneering efforts of Paul Tessier of Paris brought the field of craniofacial surgery to the forefront of plastic surgery. His techniques included intracranial access to the orbit and extensive subperiosteal dissection of the soft tissue with wide exposure of the underlying bony structures. This permits direct visualization for extensive bone grafting to either fill or augment the facial skeleton.

Plastic surgeons see numerous facial and skeletal deformities that can be divided into two categories: those associated with a clefting phenomenon and those related to a premature closure of the calvarial sutures. Within the latter group, the skull is unable to conform to the developing brain, leading to compensatory growth and abnormal cranial configurations. These patients may have a constellation of physical findings that identify them as having a recognizable syndrome, such as craniofacial dysostosis (Crouzon's disease) or acrocephalosyndactyly (Apert's syndrome).

Although most clefts are thought to have a multifactorial derivation, the exact influence of a single gene abnormality, mendelian character, or teratogenic influences during pregnancy still warrant investigation. For this reason, a concerted effort must always be made to find any other associated congenital abnormalities and determine whether the cleft is part of a known syndrome. Deformities of the upper extremities are especially common in children with clefts. Families must be counseled regarding the cause and genetics of facial clefting and possible risks of recurrence.

Cleft lip alone or combined with a cleft of the palate has been reported to have a frequency of occurrence of about one per 1,000 live births. Men are affected more often than women, with the left side more commonly affected. Women have a higher incidence of isolated cleft palate. Feeding is sometimes difficult, and physicians, nurses, and parents need to develop innovative techniques.

Although several successful techniques have gained widespread acceptance, there is still controversy regarding the optimal timing for repair. In general, lip repair is carried out when the patient is 10 weeks of age, weighs 4.5 kg (10 lb), and has a hemoglobin level of 100 grams per liter (10 grams per dl). The palate may be closed as early as 6 months to encourage the development of speech and preserve hearing. These children require serial examinations by an interdisciplinary team to detect associated problems and to develop a coordinated treatment plan. In the future we may see even earlier intervention for the correction of these problems using in utero techniques.

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Basal Cell Carcinoma

BASAL cell carcinomas, like the other radiation-induced skin cancers, are increasing in incidence, with an estimated 400,000 new cases diagnosed each year. The typical basal cell carcinoma appears as a shiny, pearl-white lesion that frequently has a central ulceration and surrounding telangiectasia. The borders are usually distinct, except for those of the morpheaform type, which spread diffusely with tentacle-like projections. Basal cell carcinomas virtually never metastasize and are most commonly superficial; however, they can be deeply invasive. These cancers invade local tissues by direct extension and cause both functional and aesthetic deformities. They may involve vital structures, such as the eye, or grow along embryonic fusion planes and invade the sinuses and brain.

Recent retrospective studies have shown that there are many effective methods for the treatment of basal cell carcinoma, with cure rates of greater than 94%. With the goal of obtaining adequate tissue margins with the best functional and aesthetic result, therefore, the current treatment of these skin cancers should be based on their size, depth, and histopathologic characteristics. Small (less than 2 cm) superficial basal cell lesions can be effectively treated with either electrodesiccation and curettage or cryosurgery, with cure rates of 95% and 97%, respectively. These are inexpensive and simple techniques that give good cosmetic results on the extremities and torso. Surgical excision in the relaxed skin tension lines with 0.5-mm margins is similarly effective, with cure rates of 94%, and frequently gives the best cosmetic result, particularly on the face. Mohs' micrographic surgery is recommended for basal cell carcinomas larger than 2 cm or those at higher risk for local recurrence or deep invasion, such as morpheaform tumors or lesions on the nose, ears, canthus, or eyelids. This technique of excision and microscopic examination of all margins has cure rates of 96% to 99% for primary tumors. In addition, Mohs' microsurgery has a similar cure rate for recurrent tumors, which is significantly better than the

60% to 70% cure rates with conventional therapy. Because the Mohs' procedure is time-consuming, more costly, and requires special training and a laboratory, it should be reserved for those difficult or recurrent tumors described earlier. After Mohs' microsurgery or surgical excision, the wound may be closed primarily with skin grafts or with local flaps for the best cosmetic result. If the lesion is extensive and at higher risk for local recurrence, the wound may be skin grafted or allowed to heal by contracture so that recurrences can be easily detected.

Radiation therapy, though not used routinely, is effective in treating basal cell carcinomas (90% to 94% cures) and can be used in old or debilitated patients. Topical 5-fluorouracil application is effective with multicentric superficial lesions. The retinoids and β-carotene have not shown efficacy in treatment or prevention.

Because ultraviolet radiation has a cumulative effect on the skin, the prevention of exposure cannot be overemphasized. It is estimated that the regular use of sunscreens could reduce the incidence of nonmelanoma skin cancers, most of which are basal cell, by 78%.

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Pressure Sores

PRESSURE sores continue to be a common, expensive, and preventable complication of long-term immobility or paralysis. They develop in about 3% to 5% of all people admitted to a hospital and 45% of those in long-term-care facilities. More than 70% occur in patients who are 70 years and older. Factors placing patients at risk for ulceration are decreased mobility, activity, and sensory perception and an increase in friction, shear forces, and moisture. Because of the difficulty and expense of treatment, resources should be directed toward prevention. Foremost is the necessity to provide pressure relief in areas supporting body weight, particularly over regions of bony prominence. Limiting the duration of pressure and reducing peak pressures over particularly vulnerable sites can now be accomplished. Dynamic pressure devices can measure individual patterns of pressure variation, allowing customized mattress and cushion therapy. Friction can also be controlled by reducing or relieving pressure.

Ulcers are classified as grade I through IV. Grade I lesions are limited to the epidermis and superficial dermis. Damage from grade II lesions involves the full thickness of skin into adipose tissue. Grade III lesions extend through the skin, subcutaneous tissue, and into underlying muscle. In grade IV lesions, all soft tissues are destroyed, with involvement of bone and vital structures. Wound infection is the most common complication, and osteomyelitis is frequently associated with full-thickness sores. In general, grade I and II ulcers are treated by local wound therapy and freedom from pressure. Grades III and IV often require surgical intervention. Repositioning and specialized air or foam mattresses as well as improving overall physical condition are important to patients with all grades.

The mainstay of established ulcer therapy is the provision of a pressure-free environment in concert with local wound care and serial surgical debridement to eliminate necrotic tissue and decrease the bacterial load. This may often be done at the bedside with simple instruments. Local anesthesia is seldom required. Ancillary factors requiring attention include adequate nutrition, the relief of continued spasticity, and the control of urinary and fecal incontinence. Psychosocial concerns, such as noncompliance, lack of self-care, and an inability to direct one's own care, must be addressed with both the family and the patient through intensive counseling and education. Antibiotic therapy is indicated only on evidence of infection—cellulitis, osteomyelitis, leukocytosis, fever, or bacteremia. Topical pharmacologic agents, such as hydrogen peroxide, povidone-iodine, and mafenide acetate, are adjuncts to be used with caution to avoid inhibiting healing by local toxicity.

Surgical closure for reasons of patient comfort, practicality, and long-term prevention are effective in more severe conditions. In some patients, such as those who are chronically ill or bedridden with multisystem disease or limited life expectancy, treatment goals may be to provide comfort rather than cure.

Numerous new wound care dressings have appeared to enhance the wound repair process in acute and chronic wounds. Well-designed controlled clinical trials are needed to differentiate between the beneficial effects of increased attention to the overall care of patients, including wound management, and the alleged salutary effects of the various dressing materials. The proper use of occlusive dressing in grade I and II ulcers can increase patient comfort and enhance healing.

There has been a shift in the past ten years toward an increasing use of muscle flap coverage for grade III and IV ulcers, which has decreased the number of operations and reduced the time to complete healing. Wound healing can now be enhanced by applying topical growth factors such as fibroblast growth factor B. The results of early clinical trials are encouraging in patients with large ulcers after surgical options have been exhausted. Electrical stimulation and biologic implants are other advanced experimental forms of therapy that may become more accessible and efficacious. Electrical stimulation has also been applied to treat secondary complications, including contracture, spasticity, deconditioning due to lack of exercise, and muscle atrophy.

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Laser Treatment of Skin Lesions

LASERS are useful in the management of numerous disease processes including hemangiomas, nevi, benign and malignant skin neoplasms, and tattoos. When laser light is shown on living tissue, one or more of the following tissue reactions occur: reflection, scattering, transmission, or absorption. Tissue vaporization results from the absorption of light delivered with sufficient energy. The laser can produce a hemostatic incision, vaporize undesirable substances and tissue at the operative site, and coagulate blood vessels.

Capillary hemangiomas of infancy have been successfully treated using either the argon or the neodymium:yttrium-aluminum-garnet (Nd:YAG) laser. It appears that the laser treatment of capillary hemangiomas of infancy produces a loss of surface vascularity, arrested growth, and early regression when compared with no therapy. Although treatment results from the Nd:YAG laser are superior to those of the argon laser, the incidence of complications is higher.

Patients with port-wine stains also respond well to laser treatment. In these cases, the argon laser seems to yield the best results. Young children have been thought not to be good candidates for laser treatment due to scarring created by the therapy. Recent evidence suggests, however, that 60% of children younger than 13 years have good to excellent results.

Many other lesions respond favorably to laser treatment. The argon laser successfully treats telangiectasias and venous lakes. Deep capillary or cavernous hemangiomas and those of the oral cavity may be best managed using the Nd:YAG laser. Tattoos can be removed by the carbon-dioxide laser, although some scarring of the overlying skin usually occurs.

Benign cutaneous pigmented lesions (actinic lentigines, senile lentigo, and café au lait spots) may be removed using the pulsed dye laser with the restoration of a nearly normal skin tone. A biopsy of a pigmented skin lesion to establish the diagnosis is necessary before initiating therapy.

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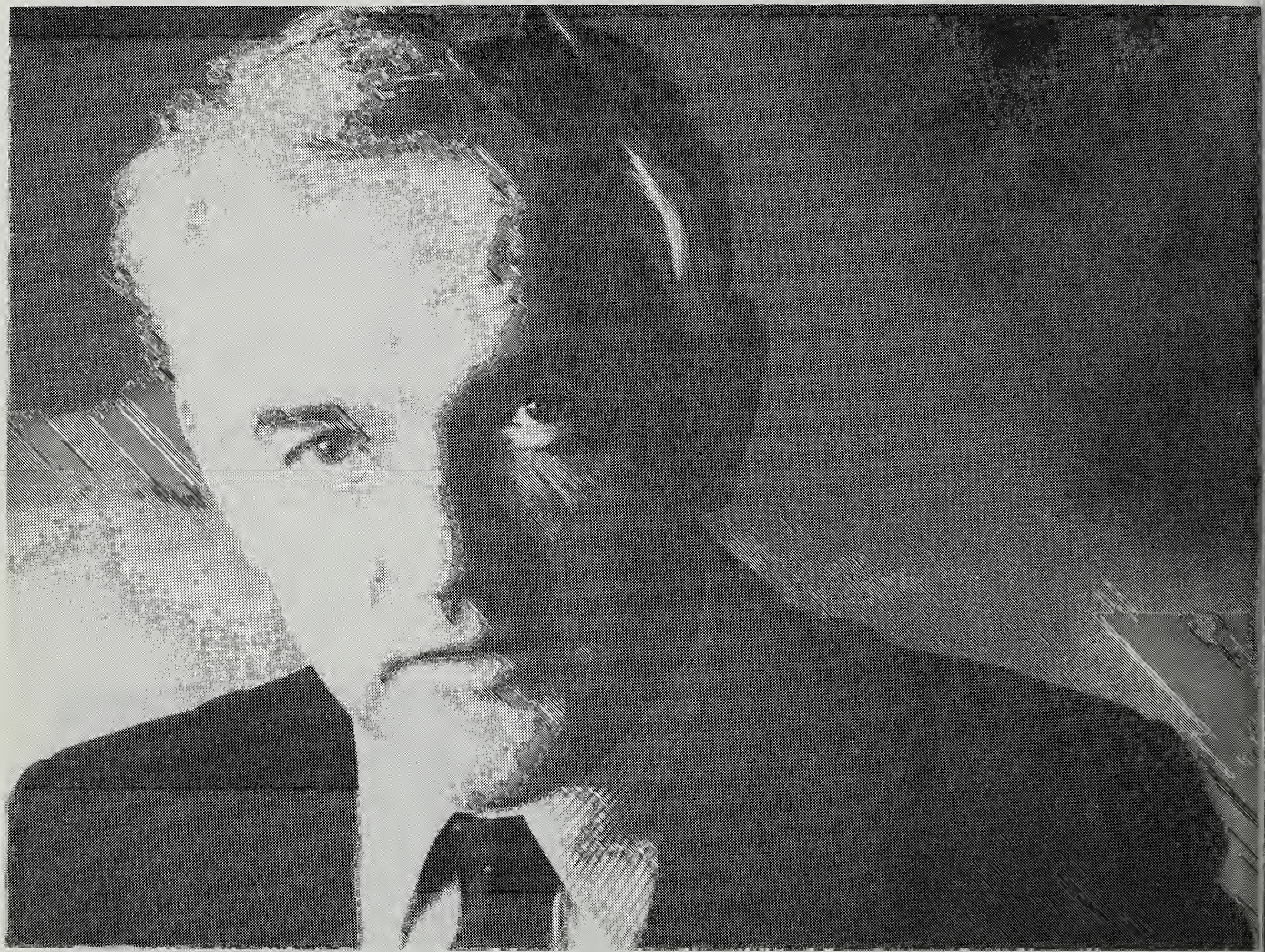

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KENNETH B. WASSER, M.D.

BOBBY'S eyes would sparkle when he talked about baseball. He knew all the top players' batting averages dating back to their rookie years. Like a lot of 12-year-old boys, Bobby loved baseball. But unlike most, he never had a chance to play little league or sandlot ball. Bobby had muscular dystrophy. His delayed motor development, waddling toe walk, and large calf muscles made the diagnosis painfully obvious when he was still a toddler. Physical therapy, bracing, and heel-cord-release surgeries were futile in preventing Bobby from being confined to a wheelchair by the time he was eight. Now, at 125 pounds, his pear-shaped body was nearly impossible for his mother Susan to handle. Caring for him was a full-time job and she had little help at home. Bobby's father, unable to cope emotionally with the illness, had left them when the child was only six. Although Susan was attractive with short, brown hair and an engaging smile, she was never able to find a companion willing to share her devotion to Bobby. She proudly displayed her community college degree on the walls of her apartment, yet she knew that working outside the home and entrusting Bobby's total care to someone else was financially and emotionally impossible.

Bobby had been in the intensive care unit before, but this time was different. Susan could barely stand looking at what seemed like an endless stream of lines and catheters going in and out of her beloved son. She realized Bobby's muscular dystrophy had severely damaged his heart muscle causing, as one of his doctors explained, "a severe cardiomyopathy unresponsive to conventional antiarrhythmics." With increasing frequency, the cardiac monitors would sound their alarms, the intensive care team would perform CPR, and Bobby would be defibrillated into normal sinus rhythm. This scene was repeated as if it were part of a Broadway show rehearsal. Susan also knew Bobby's respiratory muscles were losing what little power they had left. Her practiced eye could see by the movement of the respirator that Bobby was breathing less and less on his own. Although she knew the hopelessness of the situation, she could not bring herself to put an end to what she considered the hi-tech medical torture of her child. In the beginning, whenever the alarms went off, the doctors would ask Susan to leave the room. After a while, the ICU team let her stay with Bobby. From time to time, Susan was asked by a member of the medical team to consent to a "do not resuscitate" order. She never could. "How can I sign my child's death warrant?" she would ask. "Please don't ask me to do this."

Fortunately, Dr. Harold Jones was also involved in Bobby's care. Dr. Jones was tall, had a crop of white hair on each side of his bald crown, and walked with military bearing. He inspired immediate confidence. Despite his formidable appearance, he had the uncanny ability to establish rapport instantly with patients. He had seen Bobby from time to time in the muscular dystrophy clinic and they had gotten along fabulously because both of them loved the Boston Red Sox and could not stand the New York Yankees. Whenever Dr. Jones would talk to patients, he would always be at eye level, never looking down at them in their beds. He did not allow objects such as a desk to come between him and a patient. He would either sit down on the bed with the patient or pull up a chair alongside. He usually held the patients' hand and gently touched them wherever they felt the slightest discomfort. He didn't spend an excessive amount of time with people, but they always seemed to feel he was there longer than he actually was. Perhaps his empathy stemmed from his first-hand knowledge of loving a handicapped child. His own son was severely mentally retarded.

Dr. Jones sat with Susan, held her hand, and listened to her story. He agonized with her about her inability to consent to a "do not resuscitate" order. He felt the need to come between the bureaucratic, legal aspects of Bobby's care and Susan's personal struggle. Then it happened again. Bobby's head rolled sideways and the alarms

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sounded their continuous BEEEEP. Dr. Jones looked into Susan's pleading eyes and appeared to see into her heart. He stood up blocked the doorway and prevented the intensive care team from entering. For a moment it seemed as if there would be a confrontation. But Dr. Jones was obviously immovable. He clearly had Susan's "informed consent" even though no papers had been signed or court orders issued. His authority to act in Susan's behalf went unchallenged. Susan held Bobby and sang him his favorite baseball song. She and Dr. Jones exchanged glances for the last time and then she whispered, "Thank you."

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Guidelines for Management of Patients with Methicillin-Resistant *Staphylococcus aureus* In Acute Care Hospitals and Long-Term Care Facilities

Prepared By

The MRSA Interagency Advisory Committee in conjunction with the Connecticut Department of Public Health and Addiction Services

July 1993

ABSTRACT

- **Methicillin-resistant *Staphylococcus aureus* (MRSA) is a bacterium that can colonize or infect people.**
- **MRSA strains are not more virulent than methicillin susceptible strains.**
- **Colonized and infected patients represent the most important reservoir of MRSA in hospitals.**
- **MRSA is transmitted by direct person-to-person contact, usually on the hands of health care workers.**
- **Limiting the spread of MRSA is desirable because the organism is resistant to oxacillin, nafcillin, cephalosporins, and imipenem. Treatment of choice for MRSA infection is usually intravenous vancomycin.**
- **The preferred methods for antimicrobial susceptibility testing of *S. aureus* include oxacillin-salt screening plates, microdilution broth tests with 2% NaCI, and disk diffusion tests incubated for 24 hours at 35°C.**
- **Hospitals and LTCFs should monitor the incidence of nosocomial transmission of MRSA in their facility.**
- **Hospital admission because of MRSA infection is acceptable medical practice because treatment can best be accomplished in an acute care setting. However, given special circumstances, treatment of MRSA infection can be accomplished in an extended care facility or at home. This decision is based on the clinical judgement of the attending physician.**
- **Hospital admission solely because of MRSA colonization is unwarranted.**
- **MRSA colonization is not a contraindication to discharge from an acute care hospital to home or another facility. When a hospitalized patient who is colonized with MRSA no longer needs to receive acute nursing care (i.e. their MRSA infection and/or other acute medical problems are under control), they can be discharged. If they are discharged to another institution, that institution should be notified in advance that the patient is colonized with MRSA.**

Introduction

An increasing number of institutional facilities in Connecticut are caring for MRSA patients. This increase has raised several concerns regarding interinstitutional transfer and management of these patients. These concerns prompted the formation of a MRSA Interagency Advisory Committee in January 1993. This committee consisted of health care workers from both acute and long-term care facilities (LTCFs) and representatives from the Connecticut Department of Public Health and Addiction Services.

The goal of the Advisory Committee was to develop a document that would review briefly the epidemiology of MRSA and would serve as a guide for more consistent management of MRSA patients. The intent of this document is to provide reasonable guidelines that are based on the most current epidemiologic and scientific knowledge.

We gratefully acknowledge the many sources from which these guidelines were developed. In particular, special acknowledgement should go to the Oklahoma State MRSA Working Group, the Oklahoma State Department of Health, the Minnesota Task Force for the Management of Persons with Methicillin-Resistant *Staphylococcus aureus*, Dr. John M. Boyce, and Marguerite Jackson, R.N.

Background

Detection of MRSA within hospitals and LTCFs has increased dramatically in the last two decades and a great deal has been written regarding its management and control.[1-5] The first reports of MRSA isolates occurred in 1961[7] shortly after methicillin came into clinical use. Since then, MRSA has been a major cause of nosocomial infections in Europe. By the late 1970s the organism was identified in large teaching institutions in the U.S.[4] Now MRSA is common in all types of hospitals, especially in the eastern half of the U.S.[3] Once MRSA becomes endemic within a hospital, it is rarely eliminated and may eventually account for 5-50% of all nosocomial staphylococcus infections.[4] Concern about MRSA is related to the potential for nosocomial transmission and the limited number of antibiotics available to treat infections caused by this organism.

MRSA, the Organism

S. aureus is a gram-positive coccus that can become part of the normal human flora. At any given time, 30-40% of the general population may be colonized with *S. aureus*. This organism is commonly found on the skin and mucous membranes. However, it is also a major human pathogen which can cause abscesses, skin and wound infections, and other more severe infections such as septicemia, endocarditis, and toxic shock syndrome.[6-7]

MRSA is a strain of *S. aureus* resistant to the antibiotic methicillin; such strains are resistant to oxacillin, nafcillin, cephalosporins, imipenem, and other beta lactams. A majority of strains are also resistant to erythromycin, clindamycin, tetracycline, and the aminoglycosides. The resistance of MRSA to such agents is due to the presence of a low-affinity penicillin-binding protein (PBP-2a). There is no clinical or laboratory evidence that MRSA is more or less virulent than other strains of *S. aureus*.

Antimicrobial Susceptibility Tests.—The most accurate methods for identifying MRSA employ molecular probes that detect the presence of the mecA gene, which encodes for production of PBP-2a, or assays that detect PBP-2a in the isolates being tested.[3] However, these methods are only available in research laboratories at the present time. The preferred methods for use in clinical microbiology laboratories are microdilution broth tests with 2% NaCl, disk diffusion tests, and oxacillin-salt plates.[3] Susceptibility tests should be incubated for 24 hours at 35° C.

Colonization and Infection with MRSA.—Colonization occurs when a patient has MRSA in or on a body site but no immune response or clinical signs or symptoms of disease.[8] A person colonized with MRSA is also called a carrier.

Infection occurs when MRSA enters a body site and multiplies in tissue causing clinical manifestations of disease and an immune response.[8] This is evident by fever, a rise in the white blood cell count, or purulent drainage from a wound or body cavity. The distinction between colonization and infection should always be determined by the clinician.

Reservoirs of MRSA.—Colonized and infected patients are the major reservoir of MRSA.[3,4,9] Colonization often occurs in the nares, axillae, chronic wounds, perineum, or around gastrostomy and tracheostomy sites.[3] Patients at risk for MRSA colonization are generally debilitated patients who may have prolonged hospitalizations, chronic wounds, or exposure to multiple antibiotics.[3,4,9] Patients with a history of intravenous drug abuse can also be heavily colonized.[4,10]

Modes of Transmission.—MRSA is usually transmitted from patient to patient on the hands of health care workers by direct contact with a person who has a purulent lesion or is an asymptomatic carrier of a pathogenic strain.[3,4,8] Colonized health care workers with dermatitis or paronychia are especially likely to transmit MRSA to patients.[4] Transmission by the airborne route is much less likely to occur except in burn units where aerosolized MRSA may contaminate environmental surfaces.[3]

General Recommendations for Control of Nosocomial Transmission of MRSA

From a public health perspective, it is no longer reasonable to expect that any hospital or LTCF can be entirely MRSA free. Because of the endemicity of MRSA, 1-15% of the patient population in any given setting is likely to harbor MRSA. Thus, it is not reasonable to exclude known MRSA carriers from acute or long-term care settings. A major premise of these guidelines is that nosocomial spread of MRSA between patients can be effectively limited through proper use of appropriate barriers and handwashing, as it should be for any given pathogen.

Treatment of MRSA Patients.—Hospital admission for serious MRSA infection is acceptable medical practice because the patient will usually require intravenous antibiotic therapy with vancomycin.[11] An acute care setting is needed because vancomycin can have adverse reactions, such a ototoxicity, and in some instances produce nephrotoxicity.[7] It often requires the patient's serum levels to be monitored to assure therapeutic dosing.

The patient can be returned to a LTCF or home once treatment is complete and the clinical manifestations of infection are resolved. This is most evident when fever and white blood cell counts are normalized and erythema, swelling, and purulent drainage no longer exists. After treatment the patient may still be colonized with MRSA.

However, transfer should not be contingent on negative cultures because colonization may persist for long periods of time.[12]

Less serious infections (eg, minor skin/wound infection, UTIs) may be treated in a LTCF or at home. This decision should always be based on the clinical judgment of the attending physician.

Decolonization of MRSA Patients.—Hospital admission for MRSA colonization is unwarranted, and treatment for MRSA colonization is of limited efficacy and controversial.[3] Treatment for MRSA colonization may prove useful for some immunocompromised patients or during some MRSA epidemics; however, systemic treatment has not been shown to be more effective or safer than topical regimens.[3] A decision to attempt to decolonize should be made only after consultation with the hospital epidemiologist or infection control experts.

If treatment for colonized patients is indicated, the following regimens can be used.

- Mupirocin (Bactroban) ointment t.i.d. for seven days can be applied to colonized areas such as nares, wounds, decubiti, or dermatitis. It should not be used on chronic wounds for long periods of time, as this practice may promote emergence of mupirocin resistant strains of *S. aureus*.

- Trimethoprim-sulfamethoxazole DS b.i.d. for seven days or minocycline 100 mg p.o. b.i.d. for seven days may be necessary when an invasive device such as an endotracheal tube or gastrostomy tube site is colonized, or for pulmonary colonization. Note that minocycline can have vestibular side effects in the elderly. Rifampin 300 mg b.i.d. can be used in combination with the trimethoprim-sulfamethoxazole or minocycline regimens listed above if colonization has not cleared in seven days. Rifampin should not be used as a sole agent since the organism often becomes resistant under such circumstances. Oral regimens have not been documented to be more effective than topical ones.

- Bathing colonized patients with antimicrobial soaps such as Hibiclens every day has been employed, but its efficacy is not documented.

Universal Body Substance Precautions.—According to the Centers for Disease Control and Prevention (CDC), universal precautions apply only to blood and other body fluids containing visible blood[18] and were developed primarily to reduce the risk of transmitting HIV and HBV to health care workers. Technically, universal precautions do not apply to saliva, feces, nasal secretions, sputum, sweat, tears, urine, and vomitus unless they contain visible blood.[18] Since MRSA colonization often occurs in the nares, axillae, throat, and perineum, universal precautions alone may not be sufficient to completely prevent the spread of MRSA.

Universal body substance precautions are based on the rationale that some infectious agents are frequently present at all moist body sites. Patients may be colonized with MRSA and not be identified as carriers. While universal precautions and body substance precautions utilize the same barrier techniques,[16] body substance precautions are intended to reduce the risk of nosocomial infection in both patients and personnel. Universal body substance precautions use good handwashing technique and barriers such as gloves, masks, gowns, and eye protection to prevent transmission of microorganisms from patient-to-patient, patient-to-staff, or staff-to-patient.

Consistent practice of universal body substance precautions (Appendix II) should be considered in the care of all patients.

Epidemiologic Studies and Outbreak Measures.—Infection control personnel should review laboratory reports upon receipt to identify patients with MRSA.[13] Although this method will not detect all patients who are infected, it will assist in establishing an estimated endemic (baseline) rate of MRSA infection.

When several cases of MRSA are identified in a facility, it is important to establish whether the isolates are epidemiologically linked. One way to achieve this is to do a comparison of the antimicrobial susceptibility pattern of each isolate. However, analysis of antimicrobial susceptibility patterns may be misleading, particularly if strains gain or lose plasmids containing antimicrobial resistance determinants.[3] Thus, it is desirable to use one or more additional typing systems, such as phage typing or analysis of restriction endonuclease digests of plasmid, or chromosomal DNA if they are readily available.[19]

If the isolates are the same strain and cases are occurring at a higher rate than expected for that facility, the institution is probably experiencing an outbreak. Upon recognition of an outbreak, immediate reinforcement of infection control procedures should be implemented. Additional control measures may include:

- Culturing patient care personnel who are epidemiologically linked to the outbreak.

- Performing a survey, which consists of culturing all patients on a particular unit or ward for MRSA colonization. Although labor intensive, this type of survey may help to identify the source of the outbreak.

Culturing.—All persons with suspected bacterial infections should be routinely cultured. Culturing of persons without symptoms to determine whether colonization with MRSA has occurred is not routinely recommended and should be determined on a case-by-case basis in consultation with the hospital epidemiologist or infection control experts. When it has been determined that culturing is necessary, several sites may be considered for culturing.[11]

- Nares. A sterile, premoistened swab should be taken from both anterior nares. The swab should be placed gently and allowed to remain in each nares for two to three seconds. The same swab can be used for both nares. The swab must be placed in a sterile transport system and labeled before it is sent to a qualified laboratory for identification. The laboratory should be instructed to look for MRSA. This may entail looking only for MRSA by using selective media if the purpose is to monitor MRSA presence or absence.

- Other sites. When other sites (such as groin or axilla) are cultured swabs should be used in a manner similar to that for nares. Wounds and sites of invasive devices, such as intravenous catheters or gastrostomy tubes, should be gently swabbed with a rolling motion. If drainage is present, the skin area should first be gently cleaned with sterile gauze moistened with saline. If the site is suppurative or shows tissue destruction, culture the area most heavily involved. The anatomic location of the site must be indicated on the requisition form. For questions about culturing methods, refer to the facility's individual culturing policy or contact the microbiology laboratory evaluating the cultures.

It is important to be aware that negative cultures from one or multiple sites do not mean a person is free of MRSA.

Recommendations for Acute Care Hospitals

Patient Placement.—MRSA colonization of patients may persist for months or years. Therefore, patients who have had MRSA should be considered to be colonized whenever they are readmitted to the hospital. This information should be readily available in the patient record.

When a culture is positive for MRSA, or the patient has a history of having had MRSA, the patient should be evaluated for placement.

- Ideally, all patients colonized or infected with MRSA should be placed in a private room (negative air flow ventilation is NOT warranted).

- Patients with extensive burns should always be placed in a private room.

- Two MRSA colonized or infected patients may be placed in the same room (cohorting).

- If isolation or cohorting is not possible, patients who are colonized with MRSA and without a chronic skin condition (eg eczema) or patients who have drainage or secretions that can be easily contained can be placed in a semiprivate room with a non-MRSA affected patient who is at low risk for developing infection. To be considered low risk the roommate:

–should have intact skin (no open wounds or chronic skin conditions)

–should be mentally competent

–should be able to maintain personal hygiene

–should be able to comply with handwashing

–should not be immune compromised

–should not have invasive devices such as tracheostomy tubes, gastrostomy tubes, or intravenous devices or be anticipated to have them for the remainder of their hospitalization

Precautions.—Maintain universal body substance precautions, a system that recognizes that any patient can harbor infectious organisms and that all body substances should be treated consistently because they might contain potentially infectious material.[14,15]

Housekeeping—Practice standard housekeeping methods for cleaning rooms of patients with MRSA.

- Disinfect equipment after each patient use as per hospital policy.

Communication.—Identify history of MRSA infection/colonization in the patient's medical record.

- Notify other hospital departments of MRSA colonization/infection prior to transfer/travel to those departments.

- Notify other institutions, as soon as possible, of patient's history of MRSA when planning inter-agency transfer. This will help to ensure that optimal infection control measures are instituted.

Treatment.—When a culture is positive for MRSA, the physician will decide if this culture represents colonization or infection and what treatment, if any, is necessary. The infectious disease consultant can help with this decision. Treatment of MRSA infection usually requires IV vancomycin.

Epidemiology.—Infection control practitioners or hospital epidemiologists should review microbiology records to detect MRSA isolates and establish line lists of patients with MRSA.

- Each institution should establish baseline incidence rates for MRSA cases to enable them to detect increased incidence of nosocomial transmission.

- Routine "surveillance" cultures of axilla, groin, nares, etc. are not routinely recommended and should be discouraged since colonization may persist for long periods of time. Once a patient has MRSA, the patient should be considered colonized even if treatment has been instituted. Recolonization occurs frequently.

Outbreak Measures.—In the event of an outbreak, hospital policies for outbreak control should be instituted.

- Perform typing of MRSA isolates such as phage typing or analysis of restriction endonuclease digests of plasmid, or chromosomal DNA if readily available to establish if a common-source outbreak is occurring.
- Perform culture surveys of high risk patients to determine current levels of colonization.
- Culture personnel who are involved in the care of those who are MRSA positive and treat those believed to be persistent MRSA nasal carriers.
- Report outbreak or suspected outbreak to the Connecticut Department of Public Health and Addiction Services, Epidemiology Section (566-5058) and the Local Department of Health. This is in accordance with Section 19a-36-A2 of the Public Health Code.

Recommendations for Transfer to LTCFs—If the clinical condition has resolved, the patient should be assumed to be colonized with MRSA and transfer **should not** be contingent on obtaining negative cultures.

Recommendations for Long-Term Care Facilities

Introduction.—In a LTCF, MRSA transmission from roommate to roommate occurs at a relatively slow rate.[5] This is different from acute care facilities where transmission of MRSA among roommates or other patients with close contact has been well documented. Given that cross-transmission in nursing facilities has been rarely documented and that private rooms in nursing facilities are in short supply, placement of patients in private rooms is not appropriate.

Any approach aimed at controlling MRSA transmission needs to consider that most LTCFs encourage ambulation and group participation in social events.[17] Isolating patients colonized with MRSA not only stigmatizes these patients but also deprives them of essential interactions with others and decreases their rehabilitation potential.[17] Therefore, when determining room selection, the MRSA patient and the risk that this patient presents to other residents and staff in the facility must be evaluated. Criteria to consider include:[11]

- From what body sites has MRSA been cultured? Is the drainage or body substance containable?
- What invasive devices, if any, are present?
- What is the mental competence and personal hygiene of the individual and how do these factors relate to the patient's potential to transmit MRSA?
- What kind of direct patient care is being provided to this patient? MRSA and other infectious agents are most frequently spread from patient to patient on the hands of health care workers by direct contact transmission. Are appropriate handwashing and infection control procedures being recommended and are health care providers complying with them?

Patient Placement.—MULTIPLE BED ROOM

A patient who is colonized with MRSA should not be denied admission to a nursing home. Most of these individuals may room with a MRSA-positive resident (cohorting) if one has been identified, or may have a low-risk roommate (ie, one who does not have tubes, catheters, intravascular lines, wounds, or decubiti).

Most MRSA patients should be allowed to ambulate and socialize in other sections of the facility and participate in group activities.

PRIVATE ROOMS SHOULD BE CONSIDERED FOR THE FOLLOWING MRSA PATIENTS. In addition, these patients should not be allowed to ambulate or socialize without one-to-one supervision. This supervision should attempt to minimize direct physical contact with other residents, staff and visitors.

- Patients with respiratory colonization and a productive cough.
- Patients with colonization of a draining wound that cannot be contained.
- Colonized patients who do not understand basic hygiene and have an active skin condition which may facilitate transmission of MRSA (eg, eczema), colonized patients who may soil the room with body substances to such an extent that a roommate would be likely to have inadvertent contact[16] or as warranted by the Infection Control Committee.

Precautions.—The most important measure to control the spread of MRSA is handwashing and adherence to universal body substance precautions. Universal body substance precautions are based on the rationale that infectious agents are frequently present at all moist body sites. Patients may be colonized with MRSA and not be identified as carriers. Consistent practice of universal body substance precautions should be considered in the care of all patients.

Housekeeping.—Practice standard housekeeping methods for cleaning rooms of patients with MRSA.

Epidemiology.—Maintain a line list of patients with MRSA.

- Establish baseline incidence rates for MRSA cases to detect increased incidence of nosocomial transmission.
- Routine surveillance cultures are not recommended.

Outbreak Measures.—While an outbreak is defined as an increase in the incidence of MRSA about its expected endemic level, in a LTCF an outbreak is suggested if there are three or more nosocomially-acquired cases that are linked by person (eg, same health care provider), place (eg same wing) or time (onsets within 10 days of one another).

Upon recognition or suspicion of an outbreak, immediate reinforcement of infection control procedures should be implemented. In addition, according to Sections 19a-36-A2 and 19-13-D8t(g) of the Public Health Code, suspected institutional outbreaks must be reported to the Connecticut Department of Public Health and Addiction Services, Epidemiology Section (566-5058), the Hospital and Medical Care Division (566-1257) and the Local Department of Health. These agencies can assist in the investigation of the outbreak and assess the need for further control measures.

Communication.—Notify other institutions, as soon as possible, of patient's history of MRSA when planning inter-agency transfer. This will help to ensure that optimal infection control measures are instituted.

Summary

Detection of MRSA within hospitals and LTCFs has increased dramatically within the last two decades. While infection rates may vary from facility to facility, it is no longer reasonable to expect that any hospital or LTCF can be entirely MRSA free.

The most common means of transmission of MRSA from patient to patient is by transient carriage on the hands of health care personnel. Since patients who are carriers of MRSA may not be identified as such, thorough handwashing combined with consistent use of universal body substance precautions is a common sense approach to the prevention of nosocomial transmission of MRSA and other infectious agents. Ongoing education programs can be used to reinforce this message among all health care workers.

MRSA colonization need not deter admission or transfer to ACHs or LTCFs. However, to ensure that optimal infection control measures are instituted, prompt notification between hospitals and LTCFs is critical when planning interfacility transfer of MRSA patients.

MRSA is here to stay. However, through appropriate handwashing, proper use of protective barriers and ongoing education, transmission of this organism among patients and health care providers can be minimized.

APPENDIX I

When calculating rates, ACFs and LTCFs use different denominators when determining population at risk. Therefore, specific examples have been given for each type of facility.

Acute Care Facility

Incidence rate = (new cases occurring during a given time period x 10^n*) ÷ (number of discharges during given time period).

Example.—In March 1993, 12 patients in Hospital A developed a MRSA infection. The hospital had 1,500 total discharges for the month. What is the monthly incidence of MRSA per 10,000 discharges?

$$\frac{12}{1{,}500} \times 10{,}000 = 80 \text{ cases per } 10{,}000 \text{ discharges}$$

Long-Term Care Facilities

Incidence rate = (new cases occurring during a given time period x 10^n*) ÷ (average daily census) x (time).

Example.—Facility A, which has an average daily census of 100, identified four new MRSA infections in June 1993. What is the monthly incidence of MRSA infections per 1,000 persons?

$$\frac{4}{100 \times 30} \times 1{,}000 = 1.3 \text{ cases per } 1{,}000 \text{ person days.}$$

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*10^n is a constant that transforms the result of the division into a uniform quantity. 10^n is generally represented by 1,000, 10,000 or 100,000.

APPENDIX II

Universal Body Substance Precautions

- Handwashing is felt to be the most important procedure to prevent the transmission of MRSA. Wash hands before contact with each patient or patient-related items, and again before leaving the room.
- Wear gloves when it is likely that hands will be in contact with moist body substances (blood, urine, feces, wound drainage, oral secretions, sputum, or vomitus) or nonintact skin. Change gloves between care of different anatomical sites (ie after oral care, before moving onto dressing changes). The same pair of gloves should not be worn for prolonged periods or used on multiple patients. Hands should always be washed after removal of gloves.
- Wear masks and/or protective eyewear when it is likely that eyes and/or mucous membranes will be splashed with body substances (eg, when suctioning a patient with copious secretions).
- For patients with burns, wear gowns, gloves, and masks when entering patient's room.
- Wear gowns or plastic aprons if clothing is likely to become soiled.
- Soiled linens should be bagged near the location where used. They should not be sorted or rinsed in the patient care area. Linen that is heavily soiled with moist body substances that may soak through a linen bag must be placed in an impervious bag to prevent leakage. Linen handlers must wear barrier protection which includes gloves. Soiled linen need not be washed separately.
- Environmental surfaces should be routinely cleaned with an effective EPA registered disinfectant to reduce the bacterial load.

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DRUG INFORMATION UPDATE: HARTFORD HOSPITAL

The Medical Treatment of Hypercalcemia

PAMELA HEALEY, R.PH.

Introduction

CALCIUM plays a vital role in the normal physiologic function of many body systems, including neuromuscular conduction, cellular metabolism, and hemostasis. The skeleton accounts for 99% of calcium in the body. Of the 2.1-2.6 mmol/L of calcium in the serum only about 50% is in the pharmacologically active, unbound, ionized form (1.06-1.30 mmol/L). The percentage of ionized calcium is increased with hypoalbuminemia or acidosis.

Normocalcemia is maintained by the opposing actions of parathyroid hormone (PTH), vitamin D, and calcitonin (CT). PTH is released in response to hypocalcemia and increases serum calcium by stimulating bone resorption, increasing renal reabsorption of calcium, and stimulating the activation of vitamin D. Activated vitamin D (1,25 dihydroxycholecalciferol) promotes calcium absorption in the gastrointestinal tract and facilitates PTH induced bone resorption. Calcitonin is released in response to hypercalcemia and promotes calcium deposition into bone and renal excretion.

Etiology and Symptoms of Hypercalcemia

The two primary causes of hypercalcemia are hyperparathyroidism and malignancy. Hypercalcemia associated with some malignancies is due to a local osteolytic effect of various cytokines released by metastases. In other malignancies, remote tumors release a humoral factor, parathyroid hormone related protein (PTHRP), which mimics many of the effects of PTH.[1]

Hypercalcemic states mediated by PTH and PTHRP result from both increased bone resorption and altered renal excretion of calcium and therefore may only partially respond to therapy directed at one of these mechanisms.

There are a number of clinical symptoms associated with hypercalcemia. Neuromuscular symptoms can range from muscle weakness and lethargy to mental status changes and coma. Cardiac abnormalities include bradycardia and changes in conductivity. Excessive serum calcium causes a renal tubular defect resulting in a decreased urine concentrating capability and volume depletion. Nausea, vomiting, anorexia, and constipation are common gastrointestinal symptoms. In addition, extraskeletal deposition of calcium salts can further exacerbate renal dysfunction and cause generalized pruritis.

Medical Approach to the Management of Hypercalcemia

The definitive treatment of hypercalcemia requires treatment of the underlying disorder. However, symptomatic treatment has a role in preoperative management and the palliative care of patients with malignancy. The therapeutic agent chosen and the aggressiveness with which the goal of normocalcemia is pursued depends on the degree of hypercalcemia, the severity of the patient's symptoms, other concurrent therapies, and the patient's general state of health. In patients whose prognosis is poor, treatment aimed at improving symptoms may improve the quality of life and allow the patient to be discharged from the hospital.

The first step in the management of hypercalcemia should, of course, include the discontinuation of any calcium supplements or medications known to contribute to hypercalcemia such as lithium and the thiazide diuretics. Mobilization should be encouraged if possible.

The next step is to rehydrate the patient. The polyuria, nausea, and vomiting common with hypercalcemia cause volume depletion which further decreases the glomerular filtration and excretion of calcium. This cycle may be broken with one to two liters of 0.9% NaCl. If symptoms persist after rehydration, a forced saline diuresis can further reduce serum calcium. Furosemide (in doses of 80-100mg every one to two hours intravenously (IV))[2] decreases calcium reabsorption in the loop of Henle.

PAMELA HEALEY, R.PH., former unit dose pharmacist at Hartford Hospital.

This series on Drug Information Updates from Hartford Hospital are provided by the Drug Information Center, Department of Pharmacy Services, Hartford.

Editors: Moses Sing Sum Chow, Pharm.D., and Robert A. Quercia, M.S., R.Ph.

Volume and electrolyte replacement (especially potassium and magnesium) must continue throughout this aggressive diuretic therapy. Special care is required in patients with cardiac or renal insufficiency who are less likely to tolerate volume overload and electrolyte abnormalities. Invasive hemodynamic monitoring may be required. In some instances, rehydration with or without forced diuresis is sufficient to return serum calcium to the normal range. Further therapy employs agents that primarily decrease bone resorption. These drugs tend to have a longer duration but slower onset of action than forced saline diuresis.

Specific Drug Therapy for Hypercalcemia

Calcitonin salmon (Calcimar®, Miacalcin®) is structurally similar to the human hormone but is more potent and has a longer duration of action. This agent is useful when a rapid response to therapy is required. Calcitonin decreases bone resorption and increases the renal excretion of calcium. A starting dose of 4 IU/kg subcutaneously or intramuscularly achieves a modest hypocalcemic response within a few hours. Doses may be repeated every 12 hours and increased every one to two days to a maximum of 8 IU/kg every six hours if needed. Unfortunately, this drug often loses its effectiveness after two to six days, possibly due to antibody formation. Since an allergic reaction to salmon calcitonin is possible, a test dose is recommended prior to therapy. Nausea and vomiting are also potential adverse effects of calcitonin therapy. This therapy does require multiple injections but since calcitonin's effect is rapid in onset, it is often employed early in treatment to relieve symptoms before the longer acting agents begin to take effect.

Plicamycin (Mithracin®) is an antineoplastic antibiotic that directly inhibits the response of osteoclasts to PTH. Although the manufacturer suggests a regimen of 25μg/kg IV every day for three to four days, often a satisfactory response is achieved with a single 25μg/kg dose (1 2.5μg/kg in patients with renal or hepatic insufficiency). The dose must be infused slowly over four to six hours to decrease the risk of thrombophlebitis. Plicamycin's hypocalcemic effect begins within the first 48 hours and may last for three to 15 days. Doses may be repeated every three to seven days if required. The major toxicities of plicamycin are more likely to occur when higher doses are used in the treatment of malignancies or when frequent doses are required for hypocalcemic therapy. Thrombocytopenia, increased bleeding tendency, leukopenia, nausea, vomiting, and eated liver enzymes have been associated with plicamycin therapy. These adverse effects may limit the use of this drug in patients receiving concurrent myelosuppressive treatment for an underlying malignancy or in patients with decreased renal or hepatic function.

Table 1.—Therapeutic Agents Used in the Treatment of Hypercalcemia

Drug	Usual Dose	Drawbacks	Advantages	Cost
Calcitonin Salmon (Calcimar®, Miacalcin®)	4 IU/kg q12h IM 8 IU/kg q6h IM	Multiple injections Modest effect Loses effect after several days	Quick onset Relatively nontoxic	\$32/day[a] \$129/day[a]
Plicamycin (Mithracin®)	25 μg/kg IV x 1	Adverse reaction profile Slow onset	Single dose	\$47/single dose[a]
Gallium Nitrate (Ganite®)	200mg/m^2 IV QD x 5	Requires continuous infusion x 5 days Nephrotoxic Slow onset	Not myelosuppressive	\$404/5 day course[b]
Etidronate Disodium (EHDP) (Didronel®)	7.5mg/kg IV QD x 3	Requires multiple doses Potential nephrotoxicity Slow onset		\$164/3 day course[a]
Pamidronate Disodium (Aredia®)	60-90mg IV x 1	Slow onset	Few adverse reactions with single dose	\$284-\$426/ single dose

a=based on a 70kg patient
b=based on a 1.73m^2 patient

Gallium nitrate (Ganite®) is absorbed into bone and provides a direct, dose dependent resistance to osteoclast activity that produces hypocalcemia primarily by inhibition of bone resorption. In patients not responsive to hydration, a comparative study of gallium nitrate (200mg/m^2 IV every day for five days and calcitonin salmon (8 IU/kg IM every six hours for five days) showed more patients achieved normocalcemia, and it was of longer duration with gallium nitrate (75% *vs* 31% and six days *vs* one day respectively).[3] Gallium nitrate was shown to be superior to etidronate disodium (EHDP) in a study comparing gallium nitrate 200mg/m^2 IV every day for five days and EHDP 7.5mg/kg IV every day for five days. Overall 92% of gallium treated patients achieved normocalcemia *vs* 44% of patients receiving EHDP. In addition, the duration of effect was longer for the gallium treated patients (six days) than for the EHDP treated patients (zero days).[4] The suggested dosage regimen of gallium nitrate (200mg/m^2 every day for five days as a continuous infusion) is somewhat more cumbersome than the single-dose agents. However, since gallium is not myelosuppressive, it may be preferable in patients receiving concurrent cytotoxic agents. Up to 12.5% of patients treated with gallium nitrate may exhibit renal toxicity and concurrent use of other nephrotoxins is not recommended. Adequate urine output is necessary before gallium nitrate is started and should continue at 2 L per day during treatment. Gallium should be discontinued if the serum creatinine exceeds 2.5 mg/mL.

Etidronate disodium (EHDP) (Didronel®) and pamidronate disodium (Aredia®) are biphosphonates that lower serum calcium by adsorbing onto the surface of the bone matrix and rendering it more resistant to osteoclastic resorption. These drugs also impair the attachment of immature osteoclast precursors to bone, thereby decreasing the future function of osteoclasts.[5] In a comparative study in which pamidronate disodium was infused as a single 60mg dose versus EHDP administered at a dose of 7.5mg/kg IV every day for three days in patients who were previously hydrated, more patients (70%) achieved normocalcemia with pamidronate sodium than EHDP (41%).[6] In addition, although not statistically significant, a longer duration of response was observed for pamidronate disodium (seven days) than etidronate disodium (five days). Adverse reactions to the biphosphonate are generally mild. However, EHDP has been associated with nephrotoxicity and therefore should be used with caution, if at all, in patients with preexisting renal dysfunction. The dosage and relative advantages of these therapeutic agents used in the treatment of hypercalcemia are summarized in Table 1.

Conclusion

The treatment of hypercalcemia remains a challenge. All patients benefit from rehydration and in some patients this is sufficient to restore normocalcemia. If further treatment is warranted, drug selection depends on toxicity profile, need for concurrent medications, and the feasibility of the recommended dosage schedule. It should be kept in mind that patients may benefit symptomatically from any decrease in their serum calcium level and achieving normocalcemia may not be necessary.

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50 Years Ago

From *The Connecticut State Medical Journal*

September 1943

The Connecticut State Medical Society From 1860 to the Present

STANLEY B. WELD, M.D., *Hartford*

Presented at Sesquicentennial Celebration, Connecticut State Medical Society, Middletown, June 3 and 4, 1942.

"THIS year has witnessed the transformation of a peaceful people, devoting their energies to the cultivation of the soil, to manufactures and commerce, into the greatest military power on the earth; the pursuits of husbandry have been interrupted by the march of great armies, and the hum of the wheel and the smoke of the furnace have been lost in the roar of artillery and the cloud of battle."

Thus did President Josiah G. Beckwith address the Connecticut Medical Society in 1862. With few changes these words may well apply today. The period, 1860 to 1942, opens with war, the bloodiest and bitterest war this country had then experienced; it closes with the world at war, the most extensive and barbarous we as a nation have known. The draft was first utilized within our nation in that earlier war. Various subterfuges were resorted to in order to escape it. The halt, the blind, the diseased swelled to a fabulous number. This same Josiah Beckwith was severely censored for his decisions but with firmness he asserted that he did his duty impartially. However, men swarmed into Litchfield with haggard and ghastly countenances; stout young fellows bent over canes, and feigned excruciating rheumatism, or moaned agonizing internal and invisible maladies. Barkhamstead in town meeting voted a bounty of $100 to volunteers, at the same time resolving to publish the names of those within the draft age who applied for exemption.

Connecticut physicians played a prominent part during the early days of the former war. After a few months the Connecticut Medical Society, at the request of Governor Buckingham, elected a committee of eight to act as His Excellency's advisory board in making appointments of surgeons and assistant surgeons for the Connecticut Volunteers. Believing eight too many, the Governor reduced the number to three and selected Gurdon W. Russell of Hartford, P. A. Jewett of New Haven, and Ashbel Woodward of Franklin. These three served faithfully and well, conducting a professional (but no physical) examination of each candidate, and for their labors at the end of the remaining four years of the War the General Assembly voted each an honorarium of $200, "for expenses." Gurdon Russell is remembered as the chairman of the Centennial Committee appointed in 1889, one of the founders of the Hartford Hospital (1857), and a charter member of the Hartford Medical Society (founded 1846). Dr. Russell's historical address at the Society's Centennial remains today a source of valuable information. Ashbel Woodward was president of the Society at the outbreak of the Civil War. As Surgeon of the 26th Connecticut Volunteers he took part in the siege and capture of Port Hudson, Louisiana, and in later years participated in the bicentennial celebration of the settlement of Norwich.

Several physicians when over sixty years of age gave up large and lucrative practices to enter the Union Army. Of this group were DeWitt Clinton Lathrop of

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From the *Connecticut State Medical Journal*, September 1943.

Norwichtown who died of typhoid fever at Newbern, North Carolina, Melines C. Leavenworth who succumbed to either pneumonia or phthisis in New Orleans, and Adrian Skinner of Rockville who was a victim of malarious typhoid. John B. Welch of Winsted, a younger man, died on ship board of scarlet fever. Hubert V. C. Holcombe of Branford was more fortunate, for, although a victim of yellow fever at Newbern, he recovered to gain some renown for his treatment of this dread disease. It was Surgeon Holcombe who at the battle of Fredericksburg is said to have amputated hundreds of limbs.

Three Connecticut physicians acquired prominence by virtue of their medico-military ability. These were Francis Bacon, John B. Lewis, and George C. Jarvis. Francis Bacon graduated from the Medical Institution of Yale College at the age of twenty. However, his degree w as withheld until two years later because of his youth. Recovering from yellow fever, Dr. Bacon, by virtue of his experience and gallantry under fire, rose to the rank of major and became Director General of the Medical Department of the Gulf. After the War he received many honors, not least among them an invitation to deliver one of the addresses at Sir Thomas Browne's Tercentenary in Norwich, England. John B. Lewis, after two years in active service on the battlefield, was brevetted lieutenant colonel in 1863 . He later contracted tuberculosis, necessitating transfer to the mountains of Maryland for convalescence. George C. Jarvis served as operating surgeon for the flying hospitals around Richmond and at Petersburg. He w as known for his original treatment, quickness of decision, and speedy execution.

With the close of the War between the States the American soldier returned to his farm, factory, or store. President Isaac G. Porter of New London, addressing his fellow physicians in the Hall of Representatives at New Haven, in 1866, eulogized our Civil War soldier as one of matchless character, not only in physique, but in patriotism and mercy as well. Those were precarious days for the Connecticut Medical Society. From 1845 to 1861 the membership had decreased by 128 to a low of 250. A committee appointed at the annual meeting in 1860 to consider the question of reorganization on a more voluntary basis, reported an urgent need for reform. After sixty-nine years it was felt that the Society had failed to develop the talent or professional zeal of its members or to make use of experience acquired for the general good. An increasing proportion of the regular physicians in the State refused to lend their support. Fellows were paid to attend meetings. The annual meeting was not attractive. President Woodward recommended the establishment of a "periodical magazine" for the Society but it was decided the time was not yet ripe for the successful operation of such an enterprise.

The Medical Institution of Yale College apparently at no time licensed practitioners of medicine. Candidates for the degree of Doctor of Medicine were passed upon by a joint committee of the Institution and our Society before whom each read a dissertation and was then recommended, or not, for the degree. The actual license was granted by the Connecticut Medical Society. This situation obtained at the opening of this period and continued until 1884 when the Articles of Agreement established in 1810 were annulled. Leaders in the Medical Institution of Yale College and its successor, the Yale University School of Medicine, have maintained their leadership in the Connecticut Medical Society through these many years. Charles Hooker, one of the early professors of surgery, was a noted member of the profession. He was descended from Rev. Thomas Hooker of early Colonial fame. His biographer, Henry Bronson, writes, "though a little fond of innocent mischief (while at Yale) he did not get a bad name; did not form evil habits; did not chew tobacco; did not contract debts which he could not or would not pay." It was he who ascribed many diseases to excessive water drinking and had the fortitude to prepare and present before the American Medical Association in 1855 a forty-six page "Report on the Diet of the Sick." Dr. Hooker was a bold practitioner, frequently seen walking along the streets of New Haven with his short, quick step, a medium sized, quadrangular man, plain of dress with loose, ill fitting garments.

Pleasant relationship between the School and the Society has continued and when the School celebrated the Centennial of its first graduation its faculty was invited to conduct the annual meeting of the Society.

Prior to 1864 these annual meetings had been held in various Connecticut cities, but that year it was voted subsequently to alternate them between Hartford and New Haven. This custom prevailed until 1916 when for the first time in fifty-four years the meeting was held in Bridgeport. Specialism, or specialization, has been considered a product of the twentieth century but in 1866 the president of this Society stated, "The prevalent popularity of specialism in medicine springs in no small measure from a perversion of the principle that justifies the subdivision of labor in the mechanical arts.... The tendency of local practice is to magnify the importance of local disorders and of local remedies.... If one cannot become skilled in all departments, he cannot in any."

Epidemics were of common occurrence during the latter part of the nineteenth century. Henry Bronson in 1872 presented a lengthy discussion of the history of intermittent fever, a frequent visitor to the New Haven region, "with an attempt to distinguish known from unknown causes." The conviction that he had failed in this attempt was evidenced by his statement, "I have been unable to discover any certain connection, either in time or place, or any fixed proportion between the supposed cause and the alleged effect." Ashbel Woodward reported an epidemic of smallpox in South Windham in the winter of 1873-4 when 130 out of a population of 300 fell ill. Filth, sewer gas, and contaminated bedding were incriminated in an epidemic of diphtheria in 1879 which resulted in 300 deaths in eleven towns. This was the era of Pasteur's discovery of the bacterial origin of anthrax and of the organism of rabies, of the malarial parasite by Laveran, and the tubercle bacillus by Koch.

The Connecticut Medical Society may well boast important accomplishments during the past eighty years. As early as 1873 H. A. Carrington, in his report as chairman of the Committee on Matters of Professional Interest, suggested the advisability of establishing a State Board of Health. This was finally achieved in 1878, much of the success for the passage of the bill creating the new Board being due to the efforts of one of our members, Nathan Mayer. In 1893 the Medical Practice Act was passed requiring a certificate of registration from the Board of Health before one might engage in the practice of medicine. Three examining boards were created, representing interests of the eclectics, homeopaths, and regulars. Our first examining board comprised Max Mailhouse of New Haven, H. S. Fuller of Hartford, J. B. Kent of Putnam, L. B. Almy of Norwich, and J. W. Wright of Bridgeport. The results of the first examination the following year were a little disconcerting. There were six applicants, two for general practice and four women for midwifery. One physician passed and one failed. One midwife was unable to write and scarcely able to read, so was not even examined. Small wonder a school for midwives was suggested!

The revelations concerning the Diploma Mill Scandal of 1924 were instrumental in creating a new Medical Practice Act. We are indebted to the St. Louis Star for its efforts culminating in a Grand Jury Trial and later the presentation to the Legislature by the Grand Jury of this new Medical Practice Act. Connecticut is no longer the dumping ground for the undesirables in medical practice.

The fall meeting of the Society has undergone a definite metamorphosis. In 1908 made*(sig)* a rotating gathering with each of the County Associations except New Haven and Hartford, it was to give place fifteen years later to the Clinical Congress, one of the first postgraduate assemblies sponsored by any State Medical Society. To D. Chester Brown goes the honor of being chairman of this first Congress.

The Connecticut Medical Society was instrumental in obtaining the passage of several bills through the General Assembly. Many of these provided for better care of certain groups of patients. Notable among these from 1860 to 1908 were (1) the authorization for the Governor to spend not more than $1,500 annually for indigent idiotic children, (2) an act creating a State Hospital for the Insane at Middletown, (3) the appointment by the General Assembly of a committee to investigate the question of establishing an inebriate asylum, (4) passage of the Coroner Act giving each coroner the power to appoint his own medical examiner, (5) a law forbidding the marriage of epileptics, (6) an act providing a colony for epileptics at an initial cost of $25,000 and (7) passage of the Pure Food Bill.

Many problems developed in the practice of medicine, at times taxing to the utmost the wisdom of its leaders. President Barrows in 1877 called attention to the mistakes made in prescribing and dispensing medicines, often fatal and bringing discredit upon both physician and druggist. Counter prescribing annoyed the thoughtful in both professions, but it is only of recent years that such problems have been discussed and often settled in the joint conference committee from the two groups. Medical expert testimony has received its share of criticism. The report of a committee in 1884 to consider the question of such testimony in cases at law is of interest. We quote: "Very few physicians now go upon the witness stand with an expectation of receiving fair treatment, and apparently very few lawyers consider the medical expert only as one who is to be harried and plucked." In 1909 the Bar successfully opposed an attempt on the part of organized medicine in this state to pass a bill creating a medical expert commission appointed by the judge. Recently we have reconsidered the problem.

Publicity of the physician and his accomplishments has been a subject productive of considerable difference of opinion. President Hallock, in his annual report in 1911, advocated that each County Association reporter be a press agent, that regular press releases be furnished by the Society, and that a popular presentation of medical facts be developed. After a lapse of thirty years this has been brought about by the appointment of a full time Secretary.

One of the most controversial subjects of recent years is that of health insurance. Under this heading should be placed proposed plans for adequate medical care. As early as 1889 George L. Porter of Bridgeport, in his presidential address called attention to the cost of sickness to the individual and to the State, but not until the outbreak of World War I is there a record of the consideration of health insurance. William H. Carmalt, chairman of the Council in 1916, stated "it was inevitable that some form of health insurance for wage earners will be adopted at the next legislature," and the same year George Blumer queries, "What attitude should the physician take towards health insurance?" It was Dr. Blumer's belief that, properly conceived and adequately executed, a health insurance law will have a decidedly beneficial effect on the health of the community. Everett J. McKnight in 1916 offered a resolution to the effect that industrial insurance and particularly sickness insurance shall be made a major subject of discussion at the fall County Association meetings. Our delegate to the American Medical Association about this same time reported that health insurance is bound to come and if wisely managed will be of benefit to both profession and public. The Committee within our own Society appointed to study this problem reported in 1920 that compulsory health insurance as now in effect elsewhere and as now proposed here is not in harmony with fundamental American principles and that a scheme so socialistic would tend to stifle our development. The American Medical Association has repeatedly opposed health insurance as advocated in such acts as the Wagner and the Epstein bills. The problem of compulsory health insurance awaits solution when the greater issues arising from the present war shall have been settled.

In 1892 the Society celebrated its Centennial. It was a dignified affair. Several historical addresses were delivered; prominent among these was that of Gurdon W Russell. At this time the first sections representing the different specialties appeared within the organization. President Linsley urged a united effort to secure a medical secretary of Public Health in the cabinet of the President of the United States, but to no avail. This cabinet position has unsuccessfully been urged upon the present Chief Executive.

Yale University celebrated its bicentennial in 1901. Three of our members were selected to represent the Society on that occasion, Everett J. McKnight of Hartford, Gustavus Eliot of New Haven, and Henry I, Hammond of Killingly. When in the following year the Society decided to revise its bylaws, Dr. McKnight was appointed chairman of the committee entrusted with this task. As a result of his efforts the new constitution and bylaws were adopted in 1904 and in the following year the necessary changes in the charter were passed by the General Assembly. The Connecticut Medical Society became the Connecticut State Medical Society. Instead of Fellows sitting as a legislative body, a Council with one representative from each county and a House of Delegates constructed on a representative basis directed the business of the Society. The first secretary under the new charter was Walter R. Steiner and George R. Shepherd was the first chairman of the Council.

At the beginning of the century Connecticut medicine produced two colorful figures, William H. Carmalt and Everett J. McKnight. Both labored unceasingly for their fellow practitioners. To those among you who knew Dr. Carmalt, no reminder of his rugged honesty, gruff speech, and fearless but kindly heart is necessary. Few have exerted more influence upon the practice of medicine in Connecticut. Born of Quaker parentage he lived to he nearly ninety-three, most of these years being spent in New Haven. His accomplishments were many but as professor of surgery at Yale he is probably best remembered and in his honor the William H. Carmalt Professorship was established. Suffering the loss of an eye from glaucoma in 1917, he worked on incessantly and even in his last years with his horse and buggy, totally oblivious of any traffic regulations, he was a familiar sight on the streets of New Haven.

Everett J. McKnight of Hartford was indefatigable in his efforts on behalf of organized medicine. His presence at legislative hearings in the State House was invaluable. How well we remember him stumping along with his cane, a picture of determination hard to divert from its purpose. Everett McKnight was a remarkable man, an efficient surgeon, and a power in politics. It is said that he, while a student and athlete at Yale, was instrumental in arranging the first football game between Harvard and his Alma Mater. He was active in the local medical groups as well as in the State Society, and as a Trustee of the American Medical Association found time to make a journey to different parts of this country in the interests of organized medicine. Over in Ellington he built a summer home from the stones of his father's grist mill and there he delighted in entertaining his friends with dinners cooked over the coals.

There are others whom we might mention, influential in various spheres of activity. There was John E. Lane of New Haven, prominent in the House of Delegates of the American Medical Association; Frank H. Wheeler of New Haven who was responsible for reducing malpractice suits in this state; Paul Waterman, esteemed neuropsychiatrist and distinguished soldier, a fearless patriot and a faithful friend; Oliver C. Smith, one of Hartford's leading surgeons honored by Yale with an M.A. while president of the State Medical Society; Nathaniel E. Wordin of Bridgeport, secretary of the Society for sixteen years; Seldom B. Overlock, to whose tireless energy the Day-Kimball Hospital in Putnam stands as a living testimonial; and Ernest A. Wells of Hartford, best remembered for his frank honesty and seeming endless capacity for work.

A transformation in our Society has been taking place with ever increasing crescendo these recent years. In 1923 the Secretary reported 1,153 members. Now the membership is almost two thousand. As we review the recent accomplishments of this Society—the formation of a tumor committee, the growing interest in medical economics and the participation in the program of Federal Emergency Medical Relief, the establishment of a journal, and finally, the appointment of a full time secretary—we are mindful of Dr. Comfort's remarks in 1923: "Until recently the Connecticut State Medical Society has been the butt of everything from the Legislature down and quite deservedly. And it could be and should be the great centralizing, advisory force in all health measures and organizations in the state. The time of retiring indifference has passed." The vision of the Society's potentialities as envisaged by Dr. Comfort is fast becoming a reality.

We are engaged in another war, not of our own choosing but none the less our responsibility and our opportunity. Many physicians have already entered the service of our armed forces, more will be called before the struggle is over. The words of our Civil War President are as timely now as when he first uttered them:

"With malice toward none; with charity for all; with firmness in the right, as God gives us to see the right, let us strive on to finish the work we are in; to bind up the nation's wounds; to care for him who shall have borne the battle, and for his widow and his orphan—to do all which may achieve and cherish a just and lasting peace among ourselves and with all nations."

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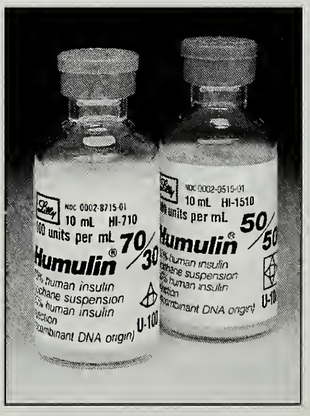

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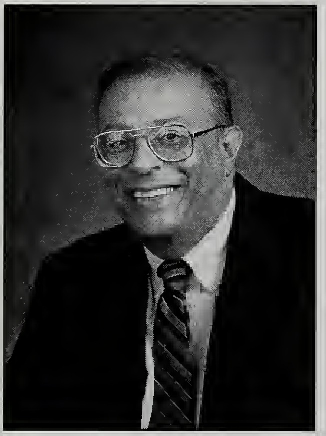
THE PRESIDENT'S PAGE

"What is a Clinician and What Does He Do?"



Twenty years ago Philip Tumulty, M.D., Professor of Medicine at Johns Hopkins, published a book many physicians are familiar with entitled, "The Effective Clinician —His Methods and Approach to Diagnosis and Care." In this era of "cost-effective" medicine, it is useful to explore the meaning of "effective" as defined by Dr. Tumulty in his delightful treatise.

Lo and behold on the very first page of the book, in a section entitled "What is a Clinician and What Does He Do?" the third paragraph concerns the "management of a sick person." The catch phrase of the present is "case management," so Dr. Tumulty once again can be a reference point for us. In his initial remarks, which originally appeared in the *New England Journal of Medicine,* he says, "managing a sick person is entirely different from diagnosing an illness and prescribing therapy for it." Management means "that the physician comprehends and is sensitive to the total effects of an illness on the total person, the spiritual effects as well as the physical, and the social as well as the economic."

Computers manned by "patient advocates," who are agents of third-party payors and driven by software-generated algorithms, are intended by many to provide the cost-effective care that can only be achieved by proper case management. Operating from remote sites these agents are part of the patient-physician interaction but seek only to control it for essentially economic reasons. In no way can they "manage" the total person.

There is nothing wrong with avoiding unnecessary costs of care or seeking alternatives to more expensive options. No one can quarrel that patients do not require hospital-based care when it can be delivered safely at home. And perhaps we could all revise our thinking about c-sections, ultrasounds in pregnancy, or certain diagnostic tests as substitutes for doing a more detailed history or physical examination. But the "ways of wise management of a sick person can only come out of an understanding spirit, and a sensitive as well as perceptive and educated mind."

Our skill at listening to, talking with, and gathering evidence from our patients is our most effective service on their behalf. As Tumulty says "The wisdom of Thomas Aquinas, the logic of Newman and the clinical genius of Osler will not be effective in working well with a patient who does not understand why he is sick, or what he must do to get well." This is true whether the therapy is an antihypertensive or a laparoscopic cholecystectomy.

The effective clinician works with "intellectual capacity, unconfined clinical experience, perceptive use of eyes, ears, hands and heart." He "infuses into his patients insight, self-discipline, optimism and courage." Above all he "understands human nature and enjoys working with it. Analytical, logical ... at the same time warm and dreaming ... gentle but strong in his beliefs and ideals, but never brittle."

In fact, the effective clinician whose special gift is managing patients is more than likely cost-effective in the modern sense. After all the best result is nearly always the most cost-effective one. Pieces of that which make for effectiveness may be doable at remote sites by nonphysician personnel with proper software. But just as a patient is not a sick liver or a sick heart but a sick human being, the interaction of clinician and patient is what ultimately determines the clinically effective management of the individual case.

We had best remember this as we redesign the financing of our health care system in Connecticut or the United States. If we don't, we could wind up being less cost effective than we should be and a good deal less effective than our patients deserve.

Howard J. Wetstone, M.D.
President

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Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

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Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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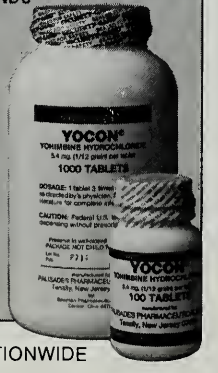

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The Houston Academy of Medicine, a 6,000-member professional organization of physicians established in 1915, announces a call for nominations for the **1994 John P. McGovern *Compleat* Physician Award**.

The award has two purposes: to bestow recognition on a physician who has made extraordinary contributions to medicine and humanity, and to remind physicians everywhere they have unique opportunities to serve mankind.

Named in honor of its first recipient, this annual award is presented to a physician who has given of himself or herself in an extraordinary manner, as exemplified in the tradition of Sir William Osler. Candidates for the award will have served in clinical patient care, preferably in clinical laboratory research; will have taught medical students, residents, fellows, and peers; and will have provided comprehensive enrichment to the medical profession, allied health professionals, and the general laity.

Other virtues to be considered in selecting the 1994 recipient will be voluntary government service, as well as service to or involvement in the advancement of medical libraries, the humanitie, and the history of medicine. Special consideration will be given to the inner person—one's fervor, persistence, dedication and love of life.

The judging committee will search for the essence of a great physician, and the selection will focus on the many elements that comprise the *complete physician,* including contributions to the human side of medicine.

The award, which consists of a medallion and $5,000, will be presented to the recipient in January 1994 at the Annual Meeting of the Houston Academy of Medicine in Houston, Texas. The award is national in scope and is open to all licensed physicians. Nominations must be received by 1 November 1993.

Complete information, rules, and an official nomination form may be obtained by writing the Houston Academy of Medicine, Jesse H. Jones Library Building, 1133 M. D. Anderson Boulevard, Texas Medical Center, Houston, Texas 77030.

REFLECTIONS ON MEDICINE

Resistance to Change: Clendening's Last Advice

ROBERT U. MASSEY, M.D.

LAST month, in the Fifty Years Ago section, we republished Logan Clendening's 1942 address to the Connecticut State Medical Society, "Resistance to Change as a Contribution to Medical Progress."[1] It was, I believe, his last published paper.[2] For those of you who know his style it surely seemed classical Clendening. Among his other entertaining virtues, he helped to correct our myopic view of the past, just as Arthur E. Hertzler[3] and others of their generation were able to do, for theirs was that period in American medicine at the turn of the century when the ways of the old clinicians were being accomodated to the new science, and the old turned out to be not as dumb as we thought nor the new as smart as we had always claimed!

Clendening's admonition against embracing most change as progress is somthing we tell students in their seminar in medical history, even proposing that all apparent progress is quite simply change, that every advance carries its cost, and the balance sheet only rarely shows a profit. It may be argued that this is a gloomy and despairing outlook, but I think not. New knowledge, enlightened understanding, is rarely anything but good; the rub is in how it is used and whether we are bright enough to discern enlightenment from a fad. This may sound like Ludditism, but lost jobs are not the only harm done by seductive new technologies. And anyway most new ideas are neither new nor enlightened.

Clendening committed suicide in 1945 when he was 61 years old. Like many creative men and women he undoubtedly was given to fits of depression. Eleven days earlier he had written to a friend, "I am like the old Frenchman who said, 'La vie est triste. J'ai lu tout les livres.' I too have read all the books and written all I am ever going to." He may also have been uneasy about approaching old age. In his book, *The Human Body*, which in 1930 was my literary introduction to medicine, he wrote of nature, "After having blundered on life, to have conceived of death was a real stroke of genius." And of old age, "When the wrinkles begin to come and vision blurs, and the breath comes short on attempting the incline! And even the cosmetician cannot cover the repetitious fund of anecdote."[4]

Several recent studies have suggested that dementia can be anticipated for 50% of us surviving past 85 years. Who among us in our serious moments can contemplate that with *aequanimitas*?

This is a question of great complexity; I doubt we have the sagacity to deal with it. "So far as I am aware, medical science has no wisdom on these matters," wrote Clendening. Nor does anyone else it seems. That he was not without hope for his own long life is suggested by the dedicatory page he wrote to his friend Peter Thomas Bohan, M.D.:

> You and I have watched together at many bed-sides, we have shown one another many pathologic specimens, ensconced temporarily to the horror of our respective wives, in our respective bath-tubs, and we have sat over many a mug of grog far into many nights discussing battle, murder, and sudden death. In the hope that we may long be preserved to indulge these relatively innocent pastimes, I dedicate to you this unworthy brochure.[4]

The technologic imperative suggests that each generation of technology carries within it the seeds of the next, and that man, having loosed the genie is no longer in control of his destiny, that his future is entirely in the hands of a raging, unfeeling technologic power. He knows there is a future, but he can neither know nor control it. It is worse even than the dogmatic determinism of 19th-century science or 16th-century calvinism. Clendening, with his irreverent humor and common sense, tells us that we can both "propose or oppose the new ideas of science...and the changing modes of living,"[1] and that by doing both we stay in charge.

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ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

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July 27, 1993

Dear State Medical Society President:

The state of Iowa is currently suffering through a devastating natu disaster in the form of record flooding. The flood waters have begun recede somewhat and the cleanup has begun in earnest. Tap water h now been restored to Des Moines, though it will not be drinkable for least another week.

Though it is too early to assess the damage caused by the floods of 199 it is certain the cost will be very high. One-third of Iowa's corn and be crops are gone and hundreds of people have lost everything, includi their homes. Business losses just in the city of Des Moines could excee $700 million. Damage to bridges, roads, sewer systems, etc. in many Iow cities and towns has yet to be assessed but is sure to be extensive.

Fortunately, Iowa hospitals and clinics were able to continue functi ing on a normal basis. There has been no outbreak of disease and the dea toll has been fairly low considering the magnitude of this calamity. As preventive measure, volunteers have given tetanus shots to thousands Iowans in recent days.

The expressions of concern and offers of assistance which I a members of the IMS staff have received from medical societies across t country have been heartwarming. The support and assistance offered b generous Americans in every state has made this tragedy more bearab for many Iowans. Many of you have asked what you might do to help.

Financial donations are sorely needed to assist Iowans forced out their homes so quickly they were able to save nothing. Following are th addresses of several organizations accepting donations:

Iowa Cares
666 Walnut
Des Moines, Iowa 50309

American Red Cross
2116 Grand Avenue
Des Moines, Iowa 50312
ATTN: Brother Phillip

Salvation Army
1330 6th Avenue
Des Moines, Iowa 503
ATTN: Lt. Hellstrom

You may wish to publicize these addresses in your newsletters, maga zines or other member communications, in case some of your member wish to make donations.

Again, thank you for your expressions of concern. Pray with us that th heavy rains have ended and that we will come through with no furthe harm to people and property.

Sincerely,

John Anderson, MD

John Anderson, M.D.
President, Iowa Medical Society

MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

"In the old days, patients would go to church and pray to God when they wanted a miracle. Now they go to the hospitals and demand it of physicians." University of California—San Diego's Dr. Larry Schneiderman.

"If managed competition-type organizations are the answer....why aren't more members of Congress, the president and his Cabinet in them? What's good for the goose is good for the gander." Representative Pete Stark.

A late July *Wall Street Journal*/NBC poll finds that only 23% of the public have a positive view of Congress....Just three in 10 feel that their representative deserves to be re-elected.

Good News....Bad News Department

The good news is that Ohio U.S. Senator Howard Metzenbaum is retiring from the Senate and will not be a candidate for reelection....Senator Metzenbaum is considered by many to be the trial lawyers' best friend in that body....The bad news is that his son-in-law, Joel Hyatt (of the legal services' franchise), is seeking the seat.

A new study (reported in *JAMA*) finds that the cost of treating AIDS appears to be dropping....Treatment for HIV costs $119,000 to $50,000 before the onset of AIDS and $69,000 after....An earlier study had estimated costs after an AIDS diagnosis at over $100,000.

A 1991 study by Gomby & Shiono estimates that 646,800 infants nationally have been exposed to illegal drugs at birth....This amounts to 16.6% of the 3.9 million live births in the U.S....The Office of the Inspector General states that 15% of drug-exposed babies are exposed to cocaine.

Ah, Regulations, What Have You Wrought?

According to a recent article in the *New England Journal of Medicine*, on an average day in 1968, American hospitals employed 435,100 managers and clerks to care for 1,378,000 patients....By 1990, the average daily number of patients had dropped to 853,000, but the number of administrative personnel had grown to 1,221,600.

A report recently released by the Council for Affordable Health Insurance found that community rating in New York, New Jersey, and Vermont "is leading to huge increases in premiums and will result in more uninsured individuals, the two variables the new rating system was supposed to reduce."...In New York, average insurance premiums for 30-year-olds increased 170% for males and 82% for females....For 60-year-olds, average premiums decreased 45% for males and 26% for females.

According to a very recent article in the *New England Journal of Medicine* and quoted in *Business Week*, the best of 200 corporate wellness programs cut medical claims by up to 20%....If such "demand reduction" could be extended to all Americans, researchers estimate that the nation could save $180 billion annually from its health bill.

Studies by McGinnis and Foege, Breslow and Breslow, indicate that lifetime medical costs (approximately $225,000 per person), are clearly linked to health habits.... "For example, the lifetime costs for smokers, despite their shorter lives, are higher than those for nonsmokers by approximately one third."

A new Louis Harris & Associates Inc. poll found that 29% of the public listed health care as one of the "two most important issues for government to address."...But, while clearly outranking all of the other issues, that total is a sharp drop from 38% in early May....The federal deficit was second at 24%, while the economy was third at 22%.

Only in America: Last year a man applied as a transfer student to the University of Illinois. Included in his application was a request that the university ignore his D average, admit him, and allow him twice as much time as other students to write exams. The reason was that he had a learning disability.

When Illinois rejected his application, he sued, demanding $500,000 for pain and suffering. The grounds? That the university violated his rights as a disabled person.

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Traditional Approaches to Acute Low Back Pain Challenged

Prolonged bed rest may be more harmful than helpful for persons with acute low back pain, according to Richard A. Deyo, M.D., of the University of Washington Schools of Medicine and Public Health. Further, most back pain patients do not need x-rays or other diagnostic imaging technologies, do not benefit from surgery, and recover rather quickly following conservative therapy. These findings are reported in a new review of back pain diagnosis and therapy conducted by the Back Pain Outcomes Assessment Team.

Dr. Deyo recommends that most persons with acute low back pain who do not have neuromotor deficits be treated conservatively with brief (1-2 days) bed rest, early walking and exercise, and short-term analgesic, muscle-relaxant, or non-steroidal anti-inflammatory drugs. The usual course of recovery is highly favorable, with 75 to 95% of patients reporting fewer symptoms within a month of onset of back pain. Among those who miss any work, nearly 95% are back on the job in six to 12 weeks.

He further recommends that plain x-rays be reserved for patients over age 50, who are more likely than younger persons to have a malignancy or compression fractures; patients with a history of cancer or suspected systemic illness; and patients who do not improve after two to four weeks of conservative therapy. Magnetic resonance imaging or computed tomography is generally used only for the small fraction of patients who eventually become surgical candidates.

The rate of lumbar spinal surgery in the United States has risen markedly over the last 12 years despite frequent lack of success and poor consensus among providers on criteria for its use, notes Dr. Deyo. He concludes that surgery should not be regarded as a last resort for all patients suffering from back pain, but should be considered primarily for patients with progressive neuromotor deficits, stable deficits that persist for several weeks after conservative therapy, or disabling sciatica unresponsive to several weeks of conservative care.

This study was funded by PORT grant HSO6344 from the Agency for Health Care Policy and Research. Details appear in "Back pain revisited: Newer thinking on diagnosis and therapy," by Dr. Deyo. It was published in the February 1993 issue of *Consultant*, 33(2), pp. 88-100.

Reprinted from *Research Activities*, August 1993.

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Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that the are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

"WHY JOIN THE COUNTY MEDICAL SOCIETY?"

To the Editor: One frequently hears the questions "Why join the County Medical Society? What have they ever done for me?"

Recently, WFSB Channel 3 in Hartford undertook a piece of investigative journalism to show government waste. A local citizen had alerted them that certain physicians were continuing to be paid by Medicare for treatments of wives, long deceased.

To catch the physician red-handed, my office, in my absence, was invaded by a reporter and helper carrying a camera. When they heard from my secretary that the patient (same name—different spelling) was alive and well, their program suddenly had no reason for being. Further inquiry of Blue Cross that afternoon by the reporter, Mr. Dennis House, confirmed a mix-up in Medicare spelling and billing. End of episode? No!

This inept and confusing piece of reporting, coupling my name with wrong-doing by physicians, was shown on the 6:00 P.M. news that evening and repeated at 11:00 P.M.

When I asked the station moguls for public clarification, I was quoted their rights guaranteed them under the First Amendment of the Constitution of the United States of America!

In frustration and anger, I turned to the office of the Hartford County Medical Society for help. Within hours Mr. Joseph Coffey, the executive secretary, Mrs. Susan Schaffman of the PR department, and Mr. Philip Walker of the prestigious law firm of Day, Berry and Howard were at work in my behalf.

WFSB Channel 3 in Hartford is due for some surprises!

My anger and frustrations have subsided, and I wish publicly to express my thanks to the capable friends we have in the office of the Hartford County Medical Society.

Sidney L. Cramer

Hartford

MENGHINI NEEDLE

To the Editor: My memory bank was activated recently when I read an editorial appearing in a national medical journal.[1] It was written by Drs. Garcia-Tsao and Boyer at the Yale University School of Medicine who affirmed the safety of performing liver biopsies on an outpatient basis. According to the two editorialists the Menghini biopsy needle has proven to be the safest of the several different biopsy needles used in their institution. Few gastroenterologists today would quibble with the assessment of the Menghini needle. But I wonder if the two writers appreciate the theatrics that were involved when this needle was first introduced to New Haven physicians 35 years ago.

In 1958, as a medical resident at the Hospital of St. Raphael in New Haven, Connecticut, I noted with some angst the slowness and significant discomfort associated with liver biopsies performed with the Vim-Silverman needle, the standard in those days. Having studied at the University of Bologna (Italy) I became familiar with the Menghini biopsy technique and its rapidity and safety. However, my efforts to make staff physicians aware of these advantages were met with polite disinterest. Indeed, I recall one New Haven gastroenterologist who in jest referred to it as "some new Italian pasta."

Determined to convince the skeptics, I asked a colleague in Italy to ship me several Menghini needles. After receiving them I honed the technique (in the autopsy room). Other members of the resident staff, aware of my endeavor, began asking me to perform biopsies on their ward patients with liver abnormalities. As ultrasound and CT scans were nonexistent, liver biopsies were often the principle means of diagnosing hepatic disorders. The attending physicians, however, remained hesitant and it required a bit of stagecraft to convince them of the needle's advantages.

In early 1959 a patient was hospitalized with unexplainable massive hepatomegaly. Except for a marked increase in his alkaline phosphatase levels, no other abnormalities were found after numerous laboratory and radiographic studies. A liver biopsy was deemed essential for the diagnosis.

When I came to discuss the procedure with the patient, his daughter, fortunately, was also in the room. She was a nurse from Georgetown University and this made the discourse seem easier. When asked if I might perform the biopsy before a group of physicians both she and her father were quite agreeable. The stage was set.

The "case" was presented at Medical Grand Rounds as a diagnostic problem. In the discussion that ensued all the participants agreed that a liver biopsy was essential. At that point and much to the surprise of the audience, the patient was brought into the conference room on a gurney. As the biopsy site was prepared the procedure was explained to the audience. Then, with incredible ease due to the liver size, a biopsy was performed in record time. A flurry of excitement and amazement followed and the patient seemed to relish the attention and the commentary by the physicians. The biopsy specimen revealed a hepatoma on histological examination.

A few weeks after this medical panache I received a telephone call from the hospital's central supply room asking my permission to lend a Menghini needle to a gastroenterologist at Grace-New Haven Hospital (the name before the change to Yale-New Haven). Needless to say the requests for liver biopsies using the Menghini needle also increased at St. Raphael's.

By the time I left for Ohio in 1960 to pursue my gastrointestinal fellowship the Menghini technique had become well established in New Haven. One of the pathology residents and I would publish our initial experience with the Menghini needle in *Connecticut Medicine*.[2] Incredibly, after I arrived in Ohio I once again found myself demonstrating the virtues of the Menghini needle to the physicians in that area. During the decade I remained in Ohio, Gerald Klatskin at Yale introduced his version of the Menghini needle.

Lee Sataline, M. D.

Cheshire

REFERENCES

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2. Sataline L, Giarritta N: The use of the Menghini needle in percutaneous liver biopsy. *Conn Med* 1961; 25:162-4.

"WRITING MAKETH AN EXACT MAN"

To the Editor: Ernie Bolt is provoked by Letters-to-the-Editor (*Conn Med* 1993; 57:500) to consider cancelling his life member subscription. Maybe it would be just as well to debate the matter in an answering "letter" without making a show of temper. Cross-fertilization of ideas might solve more problems than emotional displays.

"Letters" could make good debate since "writing maketh an exact man!" But problems are solved by consensus attained, and debate (rather than irritation) would work toward it. Human nature makes friends jealous, over the same things that strangers accept without prejudice.

Sidney Vernon

Willimantic

COMMENT ON DR. MASSEY'S ESSAY

To the Editor: Dr. Massey's essay in the July issue deserves a comment.

Regarding the plight of primary care physicians, he quotes from the Millis Report of 1966 reminding us that twenty-five years ago there was concern for medical schools to "...provide [physicians who are] models of comprehensive health care...."

Isn't it ironic that the impetus for such role models is coming from the commercial sector, that is, the insurance companies and big business?

Should we not be embarrassed and should we not examine the governance of our profession, and ascertain why we are so slow to make necessary changes?

If primary care had been properly encouraged by our medical leadership when it was suggested, many of our problems today in health care delivery might be nonexistent.

Edward J. Volpintesta, M.D.

Bethel

Book Review

Code Blue: Health Care in Crisis
By Edward R. Annis, M.D., 278 pp., Washington, D.C., Regnery Gateway. ISBN 0-89526-515-X. $21.95.

When Tim Norbeck handed me Edward Annis's book I looked over the contents, notes, and index and read the first few pages to decide whom I should ask to review it. When I found that Dr. Annis grew up in Detroit, my own home town, I kept reading; after reading the first chapter I could not put it down!

Health care reform has been getting the attention it deserves since the Clinton administration has settled in, and although most of us have known for years that changes had to be made, inflationary costs controlled, the tort system reformed, physician hassling by untrained clerks and indifferent bureaucrats brought to heel, administrative costs reduced, and more primary care physicians in the ranks of medical manpower, it was mostly talk, and since the problems were so complex and no one agreed on their solution, we doubted that much would happen. Now, with the dead certainty that managed competition will bring a new day to America, assuring health care for all at no additional cost, there is cynicism all over the place, especially since the whole thing looks like a scheme invented by politicians and insurance companies, who hate each other, and leaving out all those who actually take care of the sick. Two young internists told me recently that they would never see change for the better; anyway, they would be working for some insurance company by the year 2000. An insurance executive in a newspaper interview spoke of buying "his" doctors. On the other hand, the Hartford *Courant* in a recent editorial reported that "...Hartford-area health and business leaders indicated little need for change in health care coverage.... Politically driven programs will drive up costs and needlessly ration care."

The author, after a brief autobiographical account telling of his (and my) medical world before Medicare, traced the political and ideological origins of President Johnson's Great Society and the enactment of the Medicare and Medicaid legislation, the beginnings of employer-paid medical insurance, health care planning legislation, and the rise of the HMO movement.

Dr. Annis had been elected president of the AMA in 1962 after establishing his reputation as the best speaker and debater in defense of medicine's "Noble Traditions." As a Democrat he had easier access to the corridors of power at that time, even including the White House. Here is an exchange that took place with JFK in the Oval Office:

> I spoke up and said, "Well, Mr. President, why should we pass legislation [the King-Anderson Bill, or Medicare] to take care of everybody over sixty-five when only some of them need assistance?"
>
> "But my people tell me we have the votes to pass it," the president replied.
>
> "But, Mr. President, the question is not whether you have the votes, the question is whether it is a good policy for government to take care of everybody when only some need help."
>
> With a grin on his face he leaned over his desk shaking his finger at me, just as I had done to Walter Reuther, and said, "Now, Dr. Annis, I know all about you from our friend Senator Smathers and I'm not about to debate you; you debate Secretary Ribicoff here."

Right after Kennedy's speech in Madison Square Garden, 20 May 1962, the culminating event of a massive union-led effort to pass King-Anderson, and "one of the worst speeches of his career," according to *The New Yorker*, Edward Annis addressed the Garden's empty auditorium, giving all the reasons why Medicare should not be passed. This speech was televised nationally the next evening; a month later Annis was elected president of the AMA, and on 17 July King-Anderson was defeated.

Within two years after President Kennedy's assassination the Medicare legislation, in spite of overwhelming opinion-poll opposition a year before, was resurrected and signed into law by President Johnson; in two years health care costs had doubled. Since then these costs have continued year after year to outstrip inflation because, as Dr. Annis argues, almost everything the government has done to intrude itself into the practice of medicine, and, for that matter, into our entire social fabric, has driven costs higher. In 1990, according to a HHS report, "Medicare paid $13.3 million for reviews which denied $1.4 million in medical costs-- (p.190)." Administrative costs now are in excess of 26% of health care costs; the contribution of physicians' charges to the health care bill is only 20%, as it has been for years.

After describing the problems, and their historical antecedents, that have followed from an excess of social democracy, the author concludes in his final 17 pages with "What's the Solution?" Although we may find ourselves taking exception to some of his arguments and interpretations, their weight taken together almost persuades us that he has the diagnosis about right, and the time has now come for a Code Blue.

When problems have been well defined, solutions suggest themselves. If health maintenance is no more insurable than automobile maintenance, and since we don't buy insurance to cover groceries and haircuts, perhaps "the third-party payer systems of Medicare and tax-induced employer-based health insurance," should be abandoned, Dr. Annis asserts, in favor of the discipline of a free market, as in "buying a car or shopping for groceries." Return the money now contributed by employers and Social Security for health insurance to individuals and they will learn to make prudent choices and "pocket the savings" or "bear the cost of wasteful one's."

Only a freely operating market will assure quality and control costs; Dr. Annis suggests that we examine two "well thought-out plans": "An Agenda for Solving America's Health Care Crisis" from the National Center for Policy Analysis, and "A National Health System for America" from the Heritage Foundation. Even for those persuaded by long habit of thought that we must have *government-imposed* universal health insurance, the examination of an intelligent presentation of an opposing point of view is refreshing, even salutary.

His readers, some by this time flushed with the excitement of the newly converted, must, however, inevitably pause to ask: after five decades of progressive social democracy, what are the political, economic, and social costs of undoing all this "progress"? Perhaps the Clinton plan will so obviously prove to be the fantasy that Daniel Patrick Moynahan has called it, that the battles that must surely follow will clear the field for something new and rational. We should take notice that the British are dismantling the National Health Service!

Robert U. Massey, M.D.

Toy Closet Debuts at Children's Hospital

The Yale-New Haven Hospital Auxiliary officially kicked off its Toy Closet program in September at a reception in the Pediatric Specialty Center of the new Children's Hospital. The YNHH Toy Closet Program was started by Ann Nyberg, WTNH Action News 8 anchorwoman, who first heard about the idea as a television reporter several years ago.

"I was covering a story about a toy closet at a hospital in the midwest. I watched a wide-eyed 4-year-old girl undergo a painful bone marrow aspiration, clutching the key to the toy closet," said Nyberg. "I had the compelling urge to rescue that child from her pain. That's what the toy closet did. Selecting a toy after her procedure provided her with a sense of comfort and emotional normalcy."

As the Children's Hospital was being constructed, Nyberg approached Yale-New Haven about the idea of a Toy Closet. Seed money, said Nyberg, "came from Don Imus, the 'Morning Mouth' of WFAN, "who offered his assistance and that of his designer, Anne Mullin. The actual toy closets are specially designed armoires stocked with new toys, and located in six areas in the Children's Hospital. Pediatric patients can select a toy or an item from the armoire for an occasion such as a birthday, a difficult medical treatment, or upon discharge.

The YNHH Auxiliary coordinates the program, working with the Child Life department, on the selection of age-appropriate toys. "The opening of the Children's Hospital brings with it many new and exciting programs and projects. The toy closet is a small way to help make hospitalization less traumatic for children," said YNHH Auxiliary President Marjan Wackers, of Woodbridge. "It offers an avenue for the community to help hospitalized children."

For information about donating new toys to hosting a "Toy Tea," call the YNHH Auxiliary at 785-5717.

Joseph M. Healey, Jr., J.D.
1947-1993

"He will undoubtedly be remembered as our best-known and most beloved faculty member," one of our senior clinician teachers commented to me as we spoke of Jay Healey's brief illness and death, only repeating what we had both heard a hundred times in the past few days and weeks. A former medical student said he never thought of the medical school without recalling Jay, couldn't quite picture the place without him. Fritz Hinz, emeritus associate dean for academic affairs, was quoted by the Hartford *Courant*, "He had an enormous energy and broad knowledge and simply had a magical effect on students." Others, too, spoke of his magic.

His energy was that of a whirlwind, and his tiny office usually looked as though a whirlwind had blown through it—except when he had sworn to reform and had swept his desktop clean. These occasions were rare. Bookcases, desktop, chairs, and floor were crazily stacked with books, journals, and papers, but there was always room for a visitor, and that visitor almost always was a student. He knew them all by their first names; not only that, he knew about their families, where they had gone to school, and whether or not they were Yankee fans. He remembered them years after graduation, could name their class year, knew their interests, and could tell you whom they had married, where they did their residencies, and where they now were practicing.

Jay Healey joined the faculty of the University of Connecticut School of Medicine in 1975 in the Division of Humanistic Studies in Medicine. Our program was one of the earliest, having begun with the appointment of Stuart F. Spicker, Ph.D., in 1972. Jay's course in Law, Ethics, and the Life Sciences, later called Law and the Ethical Aspects of Medicine and Dentistry, was required for the first-year class. For most students it was their first exposure to Socratic teaching; that meant they had to participate. For many it was their formal introduction to the principles of ethics as they apply to life, law, and medicine. They learned that the scientific method was not the only, and often not even the best, road to truth. They also must have learned from Jay Healey that the good teacher embodies his message in his life.

Early in his career at the medical school he made his goal explicit, and that goal was to teach. He did not neglect scholarly work, indeed he became nationally known in his field of health law, wrote many articles and book chapters, including over 150 pages in *Connecticut Medicine*, and took part in over 200 case-presentations and rounds in Connecticut hospitals and throughout the country. He never once let any of that interfere with his teaching and his life with his students. He served the school and the university whenever asked, and he was often asked; he even chaired the faculty council (imagine a lawyer being elected chairman of a medical school faculty council!), but he never had ambitions to be an administrator, and only tolerated administrative chores when they were forced upon him. His whole life was teaching; his students knew they always came first and loved him for it.

In July he and his wife Marie returned from a glorious several weeks in France and Spain. A day or so later he was bothered by a nagging pain in his right upper quadrant that would not go away. He fulfilled some teaching and lecturing obligations and tried to control the pain with Tylenol. Even after learning the diagnosis, he made plans to teach this fall, and managed to attend the dinner of faculty and students on 23 August following the Convocation for the entering medical and dental students. On Sunday morning, 5 September, he died at home, sustained by and sustaining his family and friends, after a brief, energetic, and mostly cheerful struggle against an aggressive pancreatic tumor.

"He had too much energy to die," one of his colleagues remarked. "I just can't believe it." Knowing something of Jay's faith, I suspect that if anyone were listening he might have heard him say, using a legal term, that the whirlwind had merely changed its venue.

Robert U. Massey, M.D.

STATE OF CONNECTICUT
DEPARTMENT OF SOCIAL SERVICES
COMMISSION ON AGING

A. CYNTHIA MATTHEWS
EXECUTIVE DIRECTOR

TELEPHONE
(203) 566-3238

August 23, 1993

Mr. Timothy Norbeck
Executive Director
Connecticut State Medical Society
160 St. Ronan Street
New Haven, Connecticut 06511

Dear Tim,

I am writing to reintroduce myself in my new position as Executive Director of the new state Commission on Aging. I was formerly Commissioner on Aging for the State Department of Aging. The charge of the Commission will enable it to provide that measure of advocacy that was heretofore provided by the person of the Commissioner on Aging.

The Commission will be considering programs of concern to the elderly, including, but not limited to health care, nutrition, housing, employment, transportation, legal assistance and economic security.

The Commission will be involved in a wide range of activities aimed at meeting the needs of the community it will serve, such as: preparing and issuing an annual report to the governor; conducting studies; reporting on issues affecting the elderly; holding annual public hearings; providing input and commenting on policies and procedures of the department concerning the elderly and disseminating information to the business and academic communities, the media, as well as, state and local governments.

I, and the soon to be appointed commissioners, look forward to this new role and the added opportunities it will afford us to serve the elderly community and provide for them the best services possible.

Please call our office for information or for any suggestions you may have. Please note our new telephone number: 566-2499.

Sincerely,

Cynthia

A. Cynthia Matthews
Executive Director

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August 31, 1993

A. Cynthia Matthews
Executive Director
Commission on Aging
Department of Social Services
175 Main St.
Hartford, CT 06106-1808

Dear Cynthia:

I would like to congratulate you on your new position as Executive Director of the new state Commission on Aging. The seniors of Connecticut are indeed fortunate to have the benefit of your continued leadership and advocacy. With your permission, I would like to reprint your letter to me regarding your new position in our monthly journal, Connecticut Medicine. This journal is mailed to our complete membership and is an excellent means of communicating this type of news to the physician community.

I am looking forward to working with you in your new capacity and I extend our sincere offer to work closely with the Commission. As you may know, we have a very active Committee on Geriatrics here at the Medical Society. This committee of physicians who specialize in the field of geriatrics would be very interested in collaborating on any medical programs or seminars for seniors that you might be presenting. I have asked both Paddi LeShane and our new Director of Government Relations, Mag Connelly, to follow up on this idea and they should be in touch with you soon.

Again, I congratulate you and please know that you can contact me or the members of my staff at anytime if you feel there is something we can do to assist the Commission.

Sincerely,

Tim Norbeck
Executive Director

IN MEMORIAM

ACQUA, LOUIS C., Yale University School of Medicine, 1941. Dr. Acqua practiced family medicine in East Hartford for 40 years until his retirement in 1986. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Acqua died 12 June 1993 at the age of 77.

COLWELL, BRADFORD S., Yale Medical School, 1948. Dr. Colwell, a doctor of internal medicine, was medical director at the Clintonville Manor and Intermediate Care Facility, a physician for Montowese Health Care Center and was in private practice with his father from 1954 to 1987. He was a member of the New Haven Medical Association, the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. He served on the Liaison Committee with the Connecticut Pharmaceutical Association from 1962 to 1976. Dr. Colwell died 16 May 1993 at the age of 69.

GLAZER, MORRIS, Tulane University School of Medicine, 1922. Dr. Glazer maintained a practice in New Haven for 60 years. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Glazer died 22 June 1993 at the age of 96.

MEYERS, MARY A., Universidad Autonoma De Guadalajara, Mexico, 1982. Dr. Meyers was in private practice in Internal Medicine for the past ten years in Bridgeport and Stratford. She was a member of Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Meyers died 12 June 1993 at the age of 51.

MICHALKA, JOSEPH J., JR., St. Louis University School of Medicine, 1958. Dr. Michalka practiced internal medicine in Fairfield, was the former medical director of the Remington Arms Company, and the former chairman of the Trumbull Board of Health. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Michalka died 20 May 1993 at the age of 61.

OSTROFF, MORRIS, University of Vermont College of Medicine, 1968. Dr. Ostroff served as director of Emergency Medicine at the University of Massachusetts Medical School from 1979 to 1983 and was on staff of Mount Sinai Hospital from 1983 to 1991 when he retired. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Ostroff died 10 June 1933 at the age of 50.

RUBIN, MARTIN, Harvard Medical School, 1961. Dr. Rubin practiced internal medicine in Manchester for 27 years. Also, he had served as Chairman of the Department of Medicine and was President of the Medical Staff at Manchester Memorial Hospital. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Rubin died 29 May 1993 at the age of 57.

SEEWALD, DAVID, University of Connecticut, 1976. Dr. Seewald practiced endocrinology and was on the staff of Bradley Memorial Hospital and St. Mary's Hospital. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Seewald died 10 May 1993 at the age of 51.

SMITH, W. LESLIE, Columbia University, 1937. Dr. Smith was an obstetrician who practiced at Hartford Hospital for more than 44 years. He was a member of Hartford County Medical Association and the Connecticut State Medical Society. Dr. Smith died 20 June 1993 at the age of 84.

THUMIM, MARK, University of Maryland Medical School, 1933. Dr. Thumim was a certified specialist in eye, ear, nose and throat, and joined the staff of Middlesex Hospital in 1946. He was a member of the Middlesex County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Thumim died 10 May 1993 at the age of 83.

VEGLIANTE, MICHAEL E., Tufts University School of Medicine, 1927. Dr. Vegliante practiced ophthalmology in New Haven until his retirement in 1986. He also was assistant clinical professor of ophthalmology at the Yale Medical School and an attending physician at the West Haven Veterans Affairs Medical Center. He was a member of the American Academy of Ophthalmology, the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association and was a fellow of the American College of Surgeons. Dr. Vegliante died 20 June 1993 at the age of 89.

WALKER, ROBERT, University of Rochester Medical School, 1937. Dr. Walker had a private practice in internal medicine in the Hartford area and was on the staff of Hartford Hospital for many years. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Walker died 11 May 1993 at the age of 83.

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

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OPPORTUNITIES FOR PRACTICE

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Physicians needed part-time, mainly weekends, for walk-in care office in Windsor, Connecticut. Prefer experience, IM, FP, EM. Call 688-8888.

Connecticut: Walk-in center seeking full-time or part-time physician. Requires general medicine, minor surgery and urgent-care treatment experience. Wonderful staff, great community, good salary and benefits. Contact: Dr. T. Kandell/Dr. R. Falit, Med-Help Medical Center, P.O. Box 1120, Bristol, CT 06010. Telephone: (203) 584-8900.

PHYSICIANS—Connecticut, Essex. Excellent FT/PT opportunities in emergency department of free-standing satellite medical center of 280 bed community hospital. Satellite medical center has full service ED staffed 24 hours per day, 365 days per year, with paramedic base station, ambulance entrance. Other departments include radiology department with CT, MRI, ultrasound, on-site radiologist; full-service lab; and other services. Physicians will be based at satellite, but may also do percentage of shifts in hospital-based ED in Middletown (census 34,000). Satellite facility is unique combination of emergency and acute care medicine. Virtually no major trauma, and very little substance abuse. Full emergency department privileges. Beautiful shoreline area two hours from Boston and NYC. Seek EM/FP/IM BC/BE individual, ACLS, ATLS. ED experience required. Outstanding compensation package. Contact Michael Saxe, M.D., F.A.C.E.P., Medical Director, Middlesex Medical Center, Shoreline, 260 Westbrook Road, Essex, CT 06426. Telephone: 203-767-0107, FAX: 203-767-1563.

Full-time or part-time position available for physician (Family Practice, Internist, or Emergency Medicine) in established Walk-In Center. Highly competitive salary and benefits; very pleasant working conditions; located on beautiful Connecticut shoreline in family community. Please send CV or call: Harry Ardolino, M.D., Coastline Medical Center, 9 Business Park Drive, Branford, CT 06405. Phone: (203) 481-0818.

Physician needed for ambulatory care center. Full time and part time positions open immediately. Partnership opportunity also available. Please call (203) 665-0350, weekdays between 8:00am and 4:00pm.

FAMILY PRACTICE

Wanted: Internal Medicine, Pediatrics or Family Practice for full time primary care facility in Norwalk, Connecticut. All aspects of medicine/pediatrics. Excellent salary and benfits. Send resume and salary required to Family Medical Associates, 96 Danbury Road, Ridgefield, CT 06877.

INTERNAL MEDICINE

Community Health Care Plan (CHCP) currently has a number of interesting opportunities for BC/BE internists to join a progressive, quality-driven staff model HMO. These are career-enhancement opportunities which offer the experienced clinician a chance to combine the challenges of practicing primary care adult medicine in a highly collaborative group setting with selected practice management activities which directly support development and implementation of network-wide managed care strategies and programs. Community Health Care Plan is affiliated with Blue Cross Blue Shield of CT, and serves a prepaid membership of 45,000 enrollees at seven health centers throughout south central Connecticut. Salary is commensurate with experience. An attractive benefit package is offered in addition to base salary. Please send curriculum vitae to Marc Mann, M.D., Community Health Care Plan, 2440 Whitney Avenue, Hamden, CT 06518, (203) 287-5502. CHCP is an equal employment opportunity/affirmative action employer which actively solicits candidates in minority and protected groups.

PEDIATRICIAN

BC/BE Pediatrician to assist solo practitioner expand Connecticut practice. Thirty minutes to Hartford and New Haven. Hospital affiliations, level II nursery. Rewarding practice. Competitive salary and benefits with partnership potential. Please respond to CSMS c/o PD/US.

BC/BE pediatrician (full or part-time) to join 2 young board-certified pediatricians in a growing practice. Quality pediatric care in a relaxed friendly environment. Affiliation with a university hospital. Reasonable call schedule, competitive salary leading to early partnership. Please send CV to Dr. Ellen Wolfson, 850 North Main Street Ext., Wallingford, CT 06492.

Connecticut licensed, board certified Pediatrician, experienced seeks full-time or part-time position. Hartford area, 20 mile range. Please respond to CSMS c/o PD/UR.

Community Health Care Plan (CHCP) is seeking a full-time BC/BE pediatrician to join a group of ten pediatricians and four physician associates/nurse practitioners. This position staffs CHCP's main facility in New Haven. A strong background in general pediatrics is necessary; subspecialty training is welcomed but not a prerequisite. Clinical affiliation with Yale-New Haven Hospital is possible. Salary commensurate with experience; excellent benefit package. Please send CV to John Harper, M.D., Ph.D., Community Health Care Plan, 2440 Whitney Avenue, Hamden, CT 06518 (203) 287-5500. CHCP is an equal opportunity/affirmative action employer which actively solicits candidates in minority and protected groups.

PRIMARY CARE PHYSICIAN

National Medical Research Corporation (NMRC) is a leading pharmaceutical contract research organization (CRO) headquartered in Hartford, CT. NMRC manages clinical trials in a wide range of therapeutic areas for clients ranging from major drug companies to small biopharmaceutical firms.

NMRC is currently seeking an experienced Primary Care Physician to join the Company's clinical research team. The Physician will be responsible for the evaluation and treatment of clinical study participants at NMRC's Hartford facility. A current Connecticut State medical license is required. Experience in the clinical research field preferred.

NMRC offers a competitive salary and benefits package. Candidates searching for a challenging opportunity in a fast paced environment should forward their resume and salary requirements to: NMRC, Attn: 9320CM, Human Resources, 25 Main Street, Hartford, CT 06016 FAX: (203) 278-4717. EOE.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

GASTROENTEROLOGY

Available July 1994. Age 32. Licensed in New York. Passed National Boards. American Board Certified. M.D. at University of Vermont College of Medicine. Internship and Residency at Beth Israel Medical Center in New York. Would like to join a solo, group or associate practice in a medium size community in Connecticut. Would consider to practice some Internal Medicine as well as Gastroenterology. Skilled in performing endoscopic procedures, motility and pH studies, in addition to an interest in hepatology. Please respond to CSMS c/o GA/DH.

GENERAL PRACTICE

Available March 1994. Age 49. Licensed in Connecticut. M.D. at St. George's Hospital in London. Internship and Residency at Mount Sinai Hospital in Hartford. Would like to join a institutional or industrial practice in Connecticut. Please respond to CSMS c/o GP/TG.

GENERAL SURGERY/VASCULAR SURGERY

Available as soon as possible. Age 38. Licensed in New York and Pennsylvania. Passed National Boards. American Board Ceritifed. M.D. at University of Rochester in Rochester, New York. Internship and Residency at Strong Memorial Hospital Affiliated Program. Would like to join a group, hospital based or residency program in a large or medium size community in Connecticut. Please respond to CSMS c/o GS/TH.

NUCLEAR MEDICINE

Available August 1993. Age 32. Licensed in Illinois. Passed National Boards. American Board eligible. M.D. at Albany Medical College. Residency at St. Joseph Mercy Hospital. Fellowship at University of Texas Health Science Center. Would like to join a group, associates or institutional practice in Connecticut. Seeking a nuclear medicine position. Completed two years of radiology residency. Please respond to Dimitri E. Latoni, M.D., 376 Reflections Drive #304, Virginia Beach, VA 23452.

PULMONARY/CRITICAL CARE

Available August 1994. Age 30. Licensed in Massachusetts and Rhode Island. Passed National Boards. American Board certified in Internal Medicine. M.D. at Columbia University. Internship and Residency at Baystate Medical Center. Fellowship at Brown University. Would like to join a group practice in a large or medium size community in Connecticut. Please respond to: Frank Arnal, M.D., 94 Lakeside Drive, Coventry, RI 02816.

Acute Tumor Lysis Syndrome Complicating Fludarabine Treatment of Prolymphocytic Leukemia

LISA M. CANNON, M.D., LORI SPILOVE, M.D., ROXANA RHODES, M.D.,
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ABSTRACT—Tumor lysis syndrome rarely occurs during chemotherapy treatment of indolent lymphoid tumors. This report describes for the first time a case of acute tumor lysis syndrome complicating fludarabine treatment of prolymphocytic leukemia. In this particular case the patient had an unexpectedly rapid response to fludarabine 15 days after initiation of the first chemotherapy cycle, which was subsequently complicated by the development of tumor lysis syndrome. Until more data are known concerning fludarabine treatment of prolymphocytic leukemia, cautious monitoring of patients treated with fludarabine should be undertaken, even after completion of the chemotherapy course.

Introduction

PROLYMPHOCYTIC leukemia (PLL) is a distinct, clinical variant of chronic lymphocytic leukemia (CLL) characterized by marked hepatosplenomegaly, minimal peripheral adenopathy, and lymphocyte counts greater than 100,000.[1,2] PLL is morphologically distinguished from CLL by the presence of large lymphocytes with prominent nucleoli and immunologically by the presence of intense marker staining with IgM or IgD and the loss of mouse red blood cell receptors.[3,4] This disease typically carries a poor prognosis, exhibiting refractoriness to standard chemotherapy regimens. Successful treatment, however, has been reported with fludarabine.[5-8]

We report a case of prolymphocytoid transformation in a 75-year-old female with a history of Stage I CLL of 18 years duration. The patient was treated with one cycle of fludarabine; 15 days after completion of the chemotherapy course, she developed a severe metabolic disturbances consistent with the tumor lysis syndrome. To our knowledge, this is the first case reported of tumor lysis syndrome occurring in the setting of fludarabine treatment of PLL.

Case Report

A 75-year-old female with Stage I CLL of 18-years duration presented with a three-week history of abdominal pain, fatigue, weight loss, and anorexia. Four months prior to admission, physical examination showed her to be generally in a good state of health, with no unusual physical findings and a leukocyte count of 10,700. On admission, the physical examination was remarkable for marked hepatosplenomegaly and moderate pedal edema. There was minimal evidence of cervical and axillary adenopathy.

The leukocyte count was 540,000, of which 90% were lymphocytes. The platelet count was 130,000 and the hematocrit was 31%. The serum electrolytes were as follows: sodium, 140 mmol/L; potassium, 4.5 mmol/L; urea nitrogren, 20 mg/L; creatinine, 1.1 mg/L; calcium, 9.1 mg/dL; phosphorus, 1.7 mg/dL; uric acid, 11.1 mg/dL; lactate dehydrogenase, 1,937 U/L.

The peripheral blood smear revealed a marked lymphocytosis of which 40% were intermediate to large size prolymphocytes, with loosely clumped chromatin and prominent nucleoli (see Fig. 1). The bone marrow

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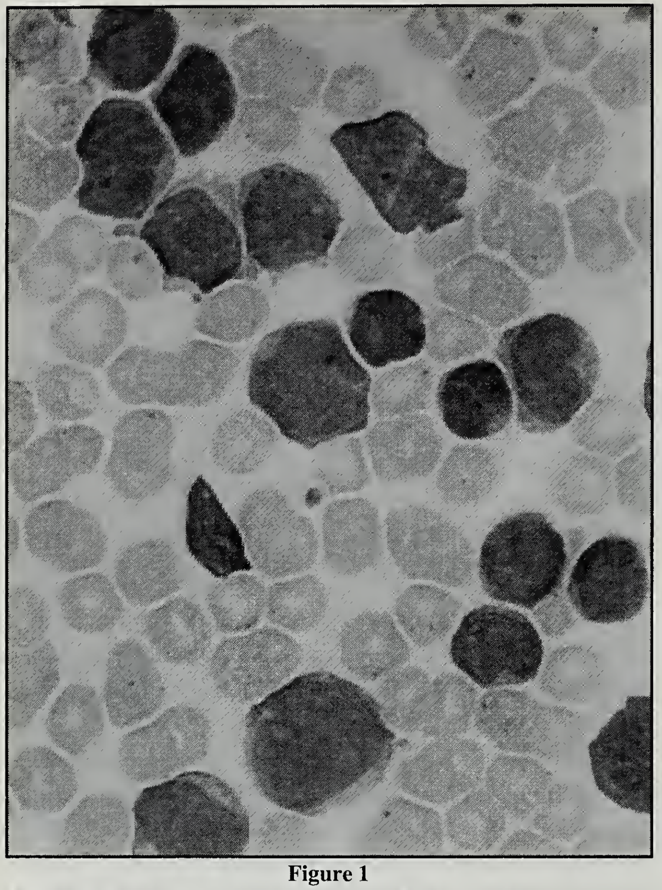

Figure 1
Peripheral smear demonstrating intermediate to large prolymphocytes.

aspirate revealed a proliferation of small lymphocytes and prolymphocytes. The bone marrow biopsy demonstrated a normocellular marrow with an interstitial lymphocytic infiltrate. Flow cytometry immunophenotyping showed the cells to be of mature B cell lineage with intense IgM,IgD, and IgM-k staining and aberrant CD5 positivity. There was no evidence of terminal deoxynucleotidyl transferase on immunofluorescent staining.

Chromosome analysis revealed three female cell lines, all of which were karyotypically abnormal. Clone I had 46 chromosomes with a reciprocal translocation between the long arms of 1 and 19, t(1;19). Clone II was hypodiploid with 44 chromosomes. In addition to t(1;19), seen in Clone I, the following translocations were detected: t(11;14), t(10;14), t(15;9), and del/t(9)(p21-pter). Clone III also had 44 chromosomes, the same aberrations as Clone II and an additional translocation der(10)+(10;14).

The patient was diagnosed with CLL in prolymphocytoid transformation. Allopurinol, 300 mg per day, and one cycle of fludarabine, 25 mg/m^2/day for five days were administered. The patient tolerated the chemotherapy regimen well. A lower urinary tract infection with *Escherichia coli* complicated the hospital course; it was successfully treated with ciprofloxacin. The patient was discharged on the ninth hospital day, with a leukocyte count of 315,000 and a slight reduction in splenomegaly.

Table 1.—Laboratory Data

	Day of Admission	**1st Day of Fludarabine**	**Post Chemo Day 4**	**Post Chemo Day 7**	**Post Chemo Day 14**	**Post Chemo Day 15**
Leukocyte count, x10^3	540	589	315	330	260	99
Hemoglobin, g/dL	10.7	10.1	10.0	10.7	11.9	7.9
Platelet count, x10^3	130	100	100	128	73	35
Sodium, mmol/L	140	141	141	132	120	121
Potassium, mmol/L	4.5	4.2	4.3	3.4	6.0	6.5
Urea nitrogen, mg/dL	20	13	20	20	67	68
Creatinine, mg/dL	1.1	0.7	0.7	0.7	2.3	2.4
Calcium, mg/dL	9.1			8.3	8.4	ion Ca, .94
Phosphorus, mg/dL	1.7				8.9	11.5
Uric acid, mg/dL	11.1	4.9		4.8		3.9
Lactate dehydrogenase U/L	1937		1,435	1,596	2,313	5,937

She was monitored as an outpatient during the subsequent nine days. Fifteen days after the fludarabine cycle was started, the patient required readmission because of progressive renal insufficiency, oliguria, severe electrolyte abnormalities, and orthostasis (Table 1). Simultaneously the leukocyte count was noted to fall precipitously from 260,000 to 99,000 in a 24-hour period. Upon readmission, the serum sodium was 120 mmol/L; the potassium 6.0 mmol/L; the urea nitrogen 67 mg/dL; the creatinine 1.9 mg/dL; the phosphorus was 8.9 mg/dL, the uric acid 3.9 mg/dL; the lactic acid level 18.0 mg/dL; the magnesium 2.9 mg/dL; the glucose 265 mg/dL; and the ionized calcium was 0.94 mg/dL. The urine gave a 1+ test for protein and urobilinogen, and the urine sediment showed two to four white cells and a small number of bacteria. Blood, urine, and sputum cultures were negative. Despite aggressive hemodynamic resuscitation and correction of the electrolyte abnormalities, the patient expired 24 hours later.

Discussion

Tumor lysis syndrome may complicate chemotherapy treatment of aggressive, proliferating tumors such as Burkitt's lymphoma, lymphoblastic lymphoma, and acute lymphoblastic leukemia. Rapid lysis of neoplastic cells results in severe metabolic derangements which include hyperkalemia, hyperphosphatemia, hypocalcemia, lactic acidosis, and hyperuricemia. Uric acid, xanthine, and phosphate deposition in renal tubular cells may precipitate oliguric renal failure. Rarely, this syndrome can also occur during treatment of indolent lymphoid tumors such as low grade non-Hodgkins lymphoma,[9] chronic lymphocytic leukemia[10,11] and prolymphocytic leukemia.[12,13] In the two cases of acute tumor lysis syndrome complicating PLL, the first patient,was treated with dexamethasone and the second with a combination of vincristine and high-dose prednisone.

Fludarabine treatment of PLL complicated by tumor lysis syndrome has not been previously reported. Fludarabine monophosphate, an adenine nucleoside analogue, has significant activity against malignant lymphoreticular cells, with favorable response rates of 40% to 77% in chronic lymphocytic leukemia,[14] and up to 35% in PLL.[4] In this case, the patient had an unexpectedly rapid response to fludarabine 15 after the first course of treatment was initiated. There was an acute 60% reduction in the leukocyte count and no further evidence of splenomegaly. These findings correlated with a rapid onset of electrolyte abnormalities.

After the first cycle of fludarabine treatment, the patient's leukocyte count gradually declined and renal function remained stable (Table 1). Fifteen days after the chemotherapy treatment was initiated, the leukocyte count fell precipitously, consistent with an abrupt reduction of the tumor burden. This suggests, that in this case, the neoplastic cells may have had a high growth fraction and mitotic index and therefore were exquisitively sensitive to the effects of fludarabine. This is unusual as B cell PLL characteristically does not respond to chemotherapy with rapid changes in tumor burden.[2] In addition, acute tumor lysis syndrome typically occurs during initiation of chemotherapy, whereas in this case the onset of tumor lysis syndrome was delayed.[15] Had tumor lysis syndrome not complicated this patient's course, a partial or even complete response might have been achieved.

The chromosome analysis performed in this case is noteworthy. Less than 50% of patients with B cell PLL have chromosome abnormalities. The most frequent abnormality is 14qt, which was not present in this case. However, the t(11;14) detected in this case was consistent with B cell PLL. The finding of del/t(9) (p21-pter) was originally described in T cell ALL. Patients with this chromosomal abnormality have a large tumor burden, high leukocyte counts, lymphadenopathy, splenomegaly, and a poor prognosis.[16] Whether the chromosome aberrations in our patient could account for the high tumor burden and exquisite sensitivity to chemotherapy is purely speculative. Further study is warranted.

Another noteworthy aspect of this case was the absence of hyperuricemia during the episode of tumor lysis. Prior to the initiation of fludarabine treatment, allopurinol was administered and uric acid levels had fallen to normal by the beginning of chemotherapy treatment. As allopurinol blocks the conversion of xanthine and hypoxanthine to aric acid, this drug may have resulted in xanthine levels in excess of the excretory capacity of the kidneys during the acute episode of tumor lysis. Although allopurinol treatment has been recommended in patients at risk for tumor lysis, its clinical use of allopurinol may not fully protect against the development of renal insufficiency if high levels of xanthine or phosphorus are present.[17,18]

The incidence of tumor lysis syndrome complicating fludarabine treatment of PLL is not known. There may not exist a subset of patients with more aggressive forms of PLL who have increased sensitivity to the antitumor effect of fludarabine and consequently are at higher risk for developing tumor lysis syndrome. Until more data are known concerning PLL and treatment with fludarabine, careful monitoring of patients treated with fludarabine for the development of acute tumor lysis syndrome should be undertaken, even after the completion of the chemotherapy course.

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Prevalence of Maternal Drug Use Near Time of Delivery

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ABSTRACT—Prenatal substance abuse is a problem of growing concern because of the negative effects it has on the health of the woman and developing fetus. To evaluate the prevalence of this problem in our community, anonymous toxicology studies were performed on 1,003 maternal urines. Samples were connected at time of delivery and selection bias was addressed. Results indicated that cocaine or marijuana metabolites were present in 4% of all urines. Among clinic patients, 12.4% tested positive (7.3% cocaine; 5.1% marijuana) and 1.3% tested positive among private patients (0.7% cocaine; 0.7% marijuana). Poor prenatal care was positively associated with substance use regardless of clinic or private care: 50% of those with fewer than three prenatal visits tested positive for cocaine or marijuana compared with 2% of those with more than three prenatal visits. Maternal age <18 years did not predict substance use. Program planning in Connecticut should progress with these data in mind.

Introduction

DESPITE a decline in the rate of overall drug use over the last five years, the number of people abusing drugs heavily has remained the same. In fact, lifetime use of cocaine has significantly increased among some populations. For example, cocaine use among the Hispanic population has increased from 7.3% in 1985 to 11% in 1988.[1] This increase of cocaine use has contributed to the changing demographics of substance abuse. Cocaine abusers now outnumber heroin abusers by a ratio of 10 to one. The male-to- female ratio of heroin abuse is three to one, while the male-to-female ratio of cocaine abuse is one to one.[2] Consequently, women of childbearing age represent an increasing proportion of illicit drug abusers. Prenatal substance abuse is a problem of growing concern because of the negative effects it has on the health of the woman and developing fetus.

The medical sequela of substance abuse in pregnancy are well documented. The risks of premature labor and abruption of the placenta are increased for pregnant women abusing drugs.[3] Maternal drug use is also associated with an increased risk of HIV, hepatitis, and syphilis. The reported effects of cocaine on the developing fetus include risk of prematurity, intrauterine growth retardation, microcephaly, genitourinary abnormalities, vascular disruptions, microcephaly, and structural abnormalities of the brain.[4,5] In addition, the newborn infant may experience significant withdrawal symptoms that may require prolonged and aggressive medical management.[6]

Other complications of maternal drug abuse include poor mother-to-infant attachment and interaction, and an increased risk of child abuse.[7] The National Committee for the Prevention of Child Abuse reported that in 1980, 30% to 40% of reported abuse and neglect was related to

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substance use.[8] Long-term effects of prenatal drug exposure on the infant include developmental and neurobehavioral abnormalities which are still evident at two years of age.[9]

The true extent of maternal substance abuse remains unknown. Prevalence rates in the literature range from 0.4% to 27%.[10-13] This variability may be the result of multiple factors ranging from differences in population demographics to variations in laboratory testing techniques. An accurate estimate of the prevalence of maternal substance abuse and a better understanding of the population at risk are both critical to program planning and development. In response to this concern, a prospective prevalence study was undertaken to to evaluate drug use by women delivering infants at Hartford Hospital.

Materials and Methods

The study took place at Hartford Hospital during a five-month period in 1991. The hospital staff perform 5,500 deliveries per year, 20% of which are patients from the hospital's own outpatient service. Three quarters of patients served by the obstetric service are private pay, and one quarter are clinic patients who have no insurance or are subsidized by the city or state. Seventy-five percent of clinic patients are of Hispanic descent (predominantly Puerto Rican).

The intent of the study was to collect a urine sample from every patient who delivered until 1,000 consecutive samples had been collected. Urines were blindly screened for marijuana metabolites, cocaine metabolites, opiates (codeine and morphine), methadone, and amphetamines (amphetamine and methamphetamine). Patient characteristics included were age, obstetric service (as a rough indicator of socioeconomic status), and extent of prenatal care. To preserve anonymity, a label with no patient identification except for three code options was completed by nursing staff and attached to the urine vial. The codes indicated if: 1) a patient was age 17 or younger or age 18 and older; 2) if she was a clinic or private patient; and 3) if she had had three or fewer, or four or more documented prenatal visits. No other identifying information was put on the label making it impossible to match patient to urine after it was coded and collected. Urine specimens were stored in a refrigerator at 4°C in the labor and delivery unit. The samples were transported daily to the laboratory where they were stored at -20°C. The laboratory processing and testing of samples took place at a later date.

The Abbott fluorescence polarization immunoassay (FPIA) was employed for amphetamines (amphetamine and methamphetamine at 300 ng/mL), marijuana (cannabinoid metabolites 20 ng/mL), opiates (codeine and morphine at 150 ng/mL), methadone (at 200 ng/mL), and cocaine metabolite (at 150 ng/mL). Drugs were identified in urine at lower cut off concentrations (ng/mL) than conventionally utilized to increase the sensitivity of detection. Samples that were positive by the FPIA screen were confirmed by gas chromatography/mass spectrometry (GC/MS).

Data were analyzed by using x^2 test with a $P<.0001$ selected to determine significance. In addition, at the end of the study a chart review was performed to compare prevalence of drug use identified by "routine nursing protocol" to the prevalence found by the study. "Routine nursing protocol" entailed documentation of drug use in the patient's medical chart if: 1) a urine was positive after screening prompted by clinical signs of drug use displayed by patient or infant, 2) the patient self-reported drug use during pregnancy, or 3) the patient had a positive history of drug use in the past.

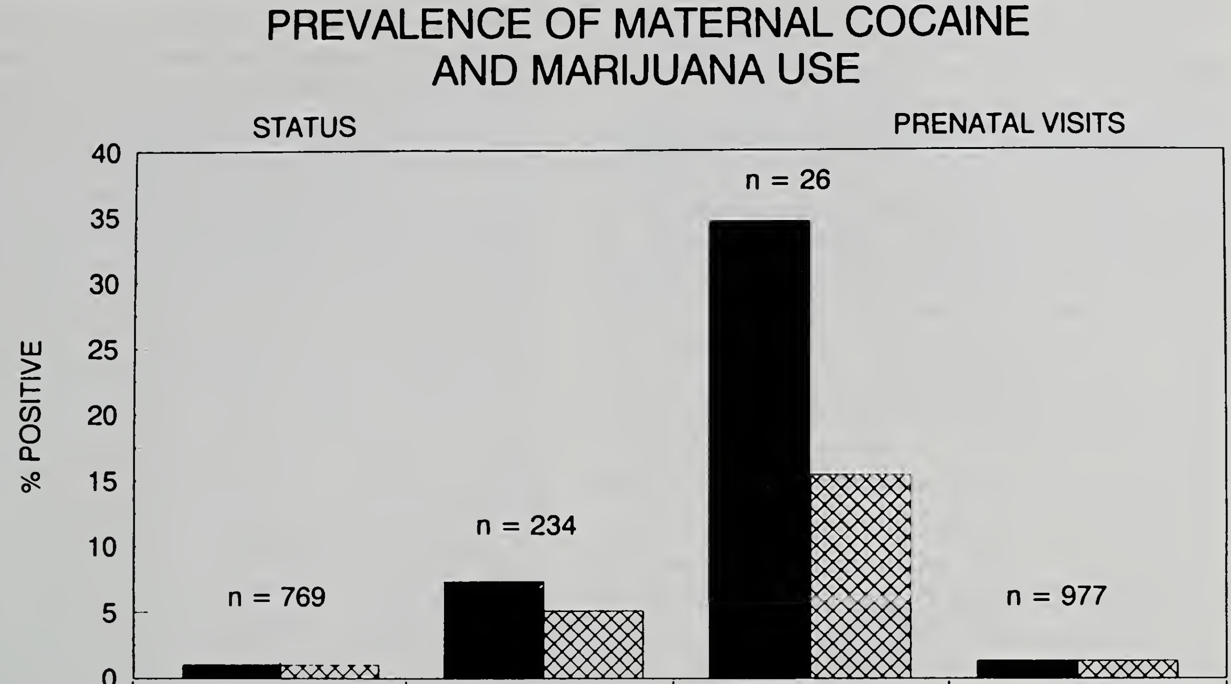
Results

Urines from 46% of patients who delivered during this time period were examined after 14 samples were discarded because of coding errors. This left a total sample size of 1,003. Nursing staff indicated that high utilization of the obstetric service was the main reason that they were unable to collect urines from every patient who delivered. Because the sample was not truly consecutive as initially planned, the possibility of bias was evaluated. This was done by comparing the distribution of study variables within the experimental sample to the distribution of those variables in the whole population during the same time period. Table 1 shows that the study population was

Table 1.—Comparison of Study Population to Actual Population

	Study	Actual
	N=1003*	N=2106
Age ≤ 17	5%	3%
Age ≥ 18	95%	97%
0-3 PNV	2%	2%
> 4 PNV	98%	98%
Clinic	23%	22%
Private	76%	77%

*Study Population = 46% of Total Sample



	PRIVATE	CLINIC	0-3 PNV	>4 PNV
% COCAINE	0.7	7.3	34.6	1.3
% THC	0.7	5.1	15.4	1.3
TOTAL	1.4	12.4	50	2.6

■ % COCAINE ▨ % THC

Figure 1

representative of the total population who delivered during the same time period, with respect to the three variables examined.

Prevalence of cocaine or marijuana use at time of delivery for all patients was 4% with a 95% confidence interval (CI) of 0-8%. Cocaine was found in 2% of all urines and marijuana was found in 2% of urines. There were no urine specimens which were positive for both cocaine and marijuana. The prevalence of clinic patients using cocaine or marijuana was 12.4% (95% CI = 6-18%) compared to 1.3% (95% CI = 1-3%) of private patients. Fifty percent of patients with poor prenatal care were using cocaine or marijuana (CI = 40-60%) compared to 2.6% who attended four or more prenatal visits (CI = 0-35%). These data are shown in Fig. 1. Our sample included 54 patients who were younger than 18 years. Among this group, 3% had marijuana in their urine at the time of delivery and no patients were positive for cocaine.

Methadone administered by a treatment program in the community was not differentiated from illicit methadone use in the data analysis because of the triple study blind. Methadone was found in less than 1% of urines. In addition, the presence of opiates due to administration of morphine at time of delivery was not differentiated from illicit narcotic use. Never-the-less, opiates were found in only 1.8% of all urines. All urines were negative for amphetamine and methamphetamine, but 7% of private patients and 2% of clinic patients tested positive for amphetamine-class drugs. These results most likely reflect the use of medications for upper respiratory infections such as over-the-counter cold medication (see Table 2).

A significant increase in the detection rate of illicit drug use occurred with anonymous and universal urine screening compared to routine nursing protocol. This was most evident among women with poor prenatal care where the detection rate rose from 18% with routine hospital practice to 50% with universal screening (see Table 3).

The x^2 test showed that type of care (clinic *v* private) was significantly associated with substance use ($P<.0001$). Poor prenatal care, defined in this study as three or fewer prenatal visits, also was positively associated with drug use ($P< .0001$).

Discussion

The results of this study provide both prevalence rates and markers for prenatal illicit drug use in the city of Hartford. However, the estimate may be conservative as urine samples taken at delivery provide information about drug use during a limited period of time. Routine urine tests will detect amphetamine, methamphetamine, codeine and morphine roughly within 48 hours of use. Cocaine, benzodiazepine and methadone ill be detected by most screens for about three days after use. The detection of marijuana is more variable, ranging from three to 30 days depending on the chronicity of use.[13] Consequently, women who used drugs intermittently throughout their pregnancy or those who were able to stop drug use prior to hospital admission were not identified.

The overall prevalence rate of cocaine and marijuana use of 4% in this study compares with data from other communities, but prevalence rates in the clinic population (13%) and poor prenatal care group (50%) provide more distinct information about Hartford. Consistent with the literature, poor prenatal care appears to be a significant predictor of maternal drug use.[14] One half of our sample who had three or fewer prenatal visits tested positive for either cocaine or marijuana. This suggests a need for more rigorous outreach in the community to identify pregnant women who are using illicit drugs to help facilitate their participation in prenatal care and substance abuse treatment.

There have been conflicting data in the literature regarding the prevalence of drug use in clinic *v* private patients.[14,15] Clinic patients in our sample had a significantly higher rate of substance abuse during pregnancy when compared to private patients. One interpretation of this result is that drug abuse during pregnancy is a phenomen more likely to be associated with a lower socioeconomic class in our community. However, women in the private-pay population generally have insurance coverage which improves access to substance abuse treatment if needed. The decreased availability of treatment to noninsured clinic patients may make abstinence more difficult and contribute to the high rate of use up until time of delivery. Increased availability of appropriate substance abuse treatment programs for those women who cannot afford treatment may address this problem.

Table 2.—Prevalence of Other Drug Use

Drug	Total Urines Positive	%
Methadone	6	>1
Opiates	18	1.8
Amphetaine	0	0
Amphetamine Class	90	9

Although the use of marijuana and cocaine near time of delivery in our adolescent population was extremely small, caution must be used when interpreting these data. A number of studies suggest that lifetime prevalence of drug use among pregnant adolescents is relatively high, however substance use is more likely to decline voluntarily and substantially during pregnancy.[16] This may be in part due to the fact that adolescents are more likely to be in the beginning stages of addiction and consequently are able to stop more easily. No information is available about their ability to sustain abstinence, suggesting that intervention may still be critical in this population.

The results of this study also underline the need to pay attention to marijuana use when education and rehabilitation are provided to pregnant women. Educational efforts have been focused on "hard" drugs such as heroin and cocaine, whereas marijuana use may be considered more benign by patients. Infants born of marijuana smoking mothers are of shorter height, weigh less, and have smaller headcircumference at birth.[17] In addition, marijuana has been called a "gateway drug" because it is associated with the use of other drugs. National statistics show that lifetime cocaine use is rare among people who have never used marijuana. However, among those who have used marijuana 200 times or more, 77.4% have tried cocaine.[1]

Table 3.—Comparison of Percent Positive by Detection Method

	Routine Nursing Protocol*	Study Urine Screen
	By Drug	
THC	.8%	2%
Cocaine	1%	2%
	By Study Variable	
0-3 PNV	18%	50%
> 4 PNV	1%	2%
Clinic	7%	12%
Private	.8%	1%

*Patient is judged positive by history or result of screening on clinical signs.

Although we were unable to screen every patient that delivered during this study period, the estimate of the prevalence of illicit drug use in our patient population enabled us to develop protocols to address the problem more effectively. We continue to struggle with the decision to screen all clinic patients at the time of their first prenatal visit since 12% of these patients were positive for one of the two drugs. Early detection without the threat of legal ramifications would provide an opportunity to monitor the pregnancy more closely, provide social and nutritional intervention, and refer the women to substance abuse treatment. This, however, involves potential legal and ethical questions as well as significant expense. In addition, ongoing universal screening may discourage utilization of prenatal services by pregnant drug-using women. However, these data have encouraged the development of protocols to screen prospectively all women who have received poor prenatal care, whether they are clinic or private patients. Those who screen positive are offered intensive substance abuse treatment and their infants are monitored more closely for early signs or problems related to their drug exposure.

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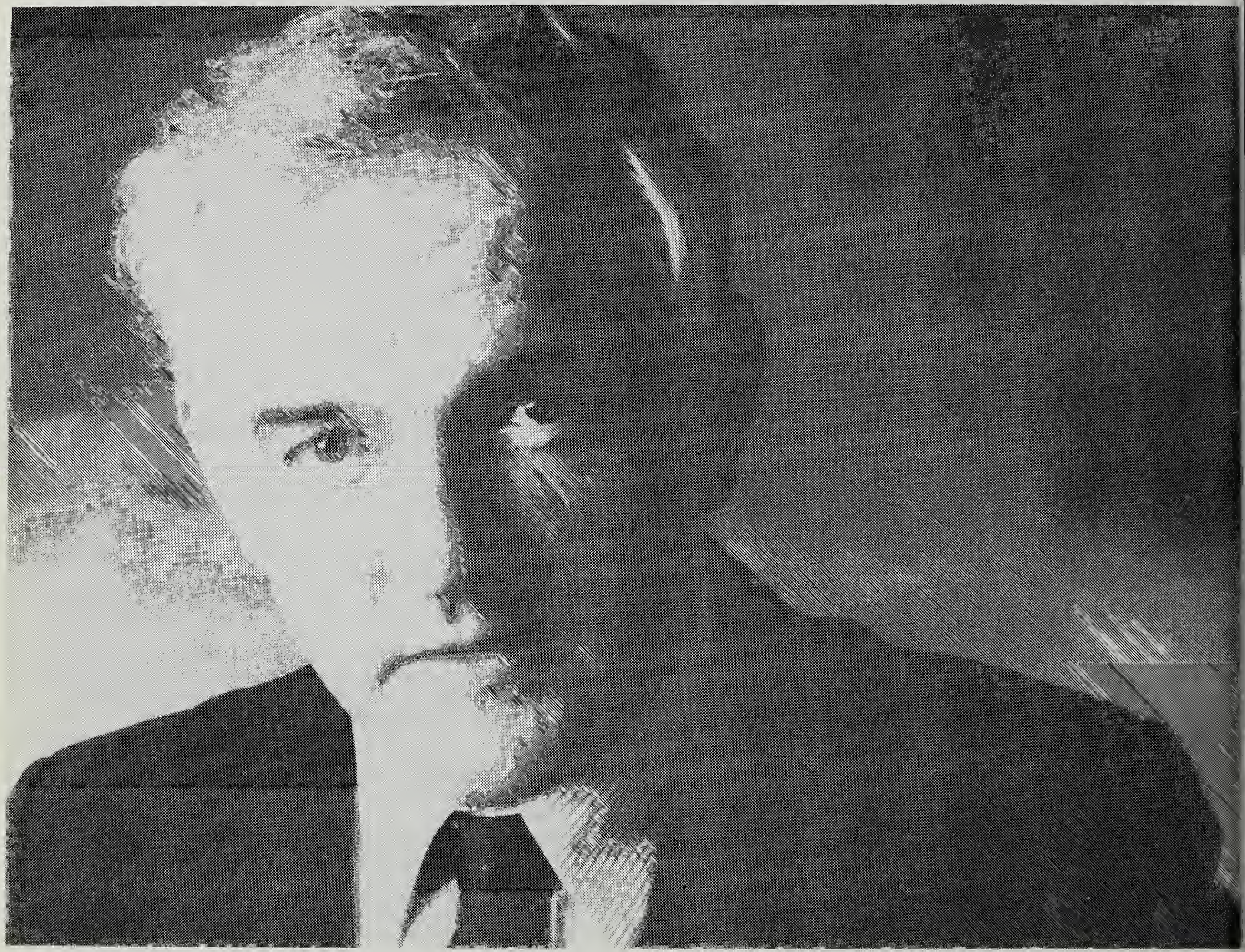

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Public Awareness of Lyme Disease in Obstetric, Pediatric, and Student Settings in Northwestern Connecticut

MICHAEL B. CURI

ABSTRACT—The purpose of this study has been to survey the attitudes and understandings of Lyme disease by pregnant women, mothers, and ninth-grade students in Northwestern Connecticut. A sample of 100 obstetrical patients from two private obstetric offices, 100 mothers from four private pediatric offices, and 200 students from four secondary schools was asked to complete a 15 question survey about Lyme disease. In all groups, the responses indicated some misconceptions or a lack of knowledge about the manifestations, diagnosis, and treatment of Lyme disease, as well as about the transmission of *Borrelia burgdorferi*. This information indicates that better public education about Lyme disease is important.

Introduction

LYME disease is a multisystem illness that may affect the skin, joints, nervous system, and heart. The disease is transmitted to human beings by the painless bite of ixodid ticks and is caused by the spirochete *Borrelia burgdorferi*.[1] Lyme disease is the commonest arthropod-borne infection in the United States, with more than 30,000 cases reported between 1982 and 1990.[1,2] There were 25 cases reported in 1992 in Litchfield County, Northwestern Connecticut, which represented an incident rate of 14.3 per 100,000 of population (the number cases reported for the entire state was 1,760 with an incidence rate of 53.5 in 1992).[3] Because of the protean manifestations of the illness and the unreliability of serological tests, the diagnosis and treatment has presented a difficult clinical challenge.[4,5]

Patient management has further been complicated by an atmosphere of confusion in media reporting and occasional panic in an uninformed public.[4] "Lyme anxiety" not only exists among some patients who may ascribe virtually any symptom to the disease, but also among those clinicians who may diagnose and treat the condition in the absence of supportive evidence.[6,7,8] When Lyme disease became a major public health issue, surveillance and education were of prime importance. The Centers for Disease Control initiated surveillance in 1982 and Lyme disease became reportable nation-wide except in the state of Oregon in 1991.[9,10,11]

In Connecticut both private institutions and public health services became advocates for research and education. The Yale School of Medicine holds an annual symposium to provide a focused update on all aspects of Lyme disease.[12] The Epidemiology section of the Department of Public Health and Addiction Services in the state of Connecticut is presently involved in a study to define and monitor the public health threat of the illness. Connecticut also sponsored a program to develop a Lyme disease education module for ninth grade students.[13]

The education of care givers and of the general public to recognize the signs and symptoms of Lyme disease could alleviate unnecessary anxiety and lead to early diagnosis and treatment. The purpose of this study has been to identify areas needing further clarification and education.

Subjects and Methods

The participants in the survey were a convenience sample of consecutive patients, parents, or students. The obstetric group comprised 50 expectant mothers surveyed during a prenatal visit and fifty surveyed during the first postnatal visit. The subjects were from two private obstetrical practices in Northwestern Connecticut. The pediatric group consisted of 100 mothers surveyed during routine office visits at four private pediatric practices in Northwestern Connecticut. The student group comprised

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MICHAEL B. CURI, Freshman, Yale College, New Haven.

200 ninth graders from two public schools and two private schools in Northwestern Connecticut. All participants completed a questionnaire about their attitudes and understanding of Lyme disease.

Table 1.—Summarizes the responses relating to acquiring Lyme disease.

[Numbers reflect percentage of responses]

1) All types of ticks transmit Lyme disease.

	True	*False*	*I don't know*
Obstetric	6	66	28
Pediatric	10	80	10
Student	13.5	69	17.5

2) How careful should you be around someone with Lyme disease?

	Very careful	*Careful*	*Not careful*	*I don't know*
Obstetric	5	21	44	30
Pediatric	8	14	52	26
Student	8	22	45	25

3) How concerned should you be if you find a tick on your body?

	Very concerned	*Concerned*	*Not concerned*	*I don't know*
Obstetric	54	45	0	1
Pediatric	49	50	0	1
Student	45	48	2.5	4.5

4) How concerned about Lyme disease should you be while playing or working on your lawn?

	Very concerned	*Concerned*	*Not concerned*	*I don't know*
Obstetric	23	51	19	7
Pediatric	18	58	18	6
Student	16.5	53	22	8.5

5) Lyme Disease affects males more than females.

	True	*False*	*I don't know*
Obstetric	2	68	30
Pediatric	0	80	20
Student	3	53.5	43.5

6) You should destroy any tick you find on your body.

	True	*False*	*I don't know*
Obstetric	63	27	10
Pediatric	51	38	11
Student	62.5	22.5	15

7) How concerned should you be about getting Lyme disease during the wintertime?

	Very concerned	*Concerned*	*Not concerned*	*I don't know*
Obstetric	7	24	41	28
Pediatric	1	22	50	27
Student	2	22.5	53.5	22

Table 2.—Summarizes the responses to symptoms, diagnosis, and treatment of Lyme disease.

8) Tick bites are painful.

	True	*False*	*I don't know*
Obstetric	10	55	35
Pediatric	6	70	24
Student	9.5	68.5	22

9) The symptoms of Lyme disease can mimic those of other diseases.

	True	*False*	*I don't know*
Obstetric	77	3	20
Pediatric	87	2	11
Student	51.5	11	37.5

10) A characteristic bull's eye rash is associated with all cases of Lyme disease.

	True	*False*	*I don't know*
Obstetric	24	41	35
Pediatric	37	39	24
Student	29	26	45

11) Lyme disease can cause joint problems.

	True	*False*	*I don't know*
Obstetric	74	5	21
Pediatric	88	0	12
Student	61	3	36

12) How reliable are the laboratory tests for diagnosing Lyme disease?

	Very reliable	*Reliable*	*Unreliable*	*I don't know*
Obstetric	5	42	9	44
Pediatric	7	39	22	32
Student	12	54	5	29

13) Lyme disease can be treated with antibiotics.

	True	*False*	*I don't know*
Obstetric	56	6	38
Pediatric	69	8	23
Student	51	11.5	37.5

14) How great an effect does Lyme disease have on a pregnancy?

	Major effect	*Minor effect*	*No effect*	*I don't know*
Obstetric	46	6	0	48
Pediatric	43	6	1	50
Student	29.5	15	1.5	54

15) How concerned should you be if you are diagnosed as having Lyme disease?

	Very concerned	*Concerned*	*Not concerned*	*I don't know*
Obstetric	71	27	0	2
Pediatric	73	23	1	3
Student	60	27	0	13

Results

Table 1 and 2 summarize and compare the questionnaire responses in the three target groups (Obstetric, Pediatric, Student). In all three target groups, misperceptions existed concerning the appearance of the bull's eye rash, the reliability of diagnostic testing, what to do when a tick is found on a person, and the seasonal aspects of Lyme disease. In all three target groups, there was a lack of knowledge of the noncontagious aspect of the illness, the nonpainful nature of the tick bite, that the disease is not gender related, that the symptoms are treatable with antibiotics, and how Lyme disease may influence a pregnancy. Although each target group showed minimal concern about casual exposure to ticks, a large majority was very concerned if they had been diagnosed as having Lyme disease. In general, expectant mothers and mothers were somewhat better informed than the students.

Comments

This survey represented a select sample from Northwestern Connecticut and may not mirror the entire population of the state. Results from an area with a low prevalence of Lyme disease may not be generalizable to endemic areas where both fear and knowledge about the illness may be greater. Furthermore, only private practice patients were screened. However, if anything, these results may be biased towards including people of a higher socioeconomic status who are better informed.

In Northwestern Connecticut there is a need for further clarification and education for pregnant women, mothers, and ninth grade students about aspects of the risks, complications, and the management of Lyme disease. A random statewide phone sample of 200 households supported the importance of educating persons about Lyme disease.[14] It is recommended that obstetricians, pediatricians, and science teachers take an active role in initiating discussions and providing information about the areas in which the public is unclear or uninformed. These educational encounters, using visual aides, written material, and time to answer questions, could take place during prenatal visits, as a part of well child-care sessions, or in junior high school health classes.

The author acknowledges the invaluable help of Eugene D. Shapiro, M.D., Associate Professor of Pediatrics and Epidemiology, Yale University School of Medicine, New Haven.

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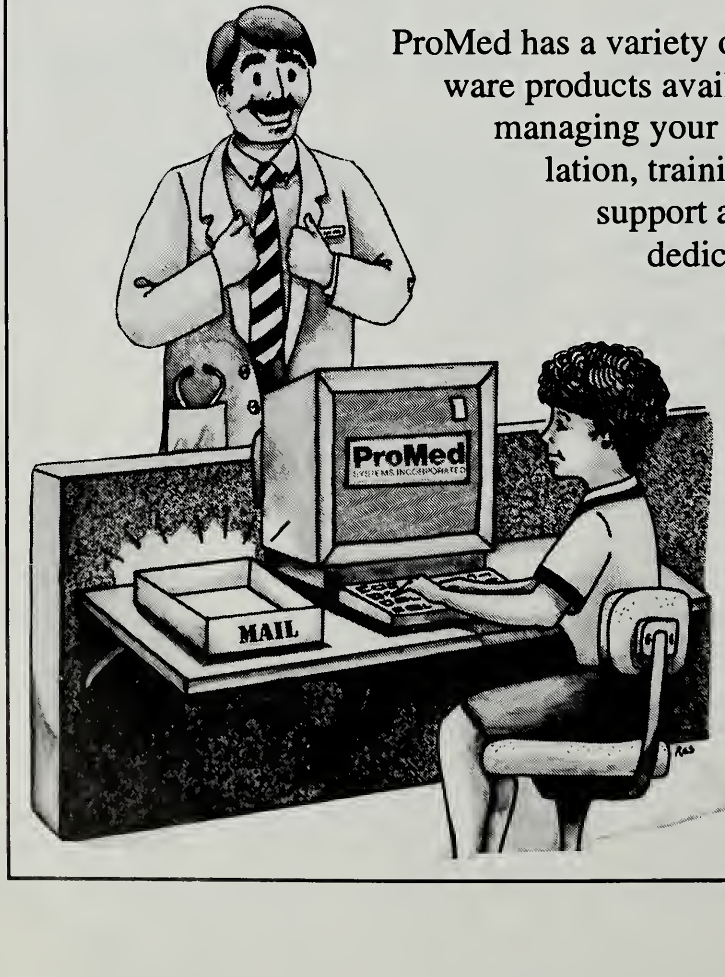

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Cutaneous Metastasis of Colon Carcinoma: A Case Report

SUSAN A. SGAMBATI, M.D. AND GEORGE H. BARROWS, M.D.

Introduction

CUTANEOUS metastases from colon carcinoma are not uncommon, yet are infrequently recognized and reported. The incidence of cutaneous metastases from colon carcinoma is less than 4% and does not parallel the sex-related incidence for colon carcinoma. Cutaneous colonic metastases occur more frequently in males. The lesions are most often found on the abdomen and are neither distinctive nor diagnostic in appearance; biopsy is therefore critical to diagnosis. Cutaneous metastases indicate widespread disease and a poor prognosis. The following is a case report of colon carcinoma metastatic to the neck and a review of the pertinent literature.

Case Report

A 62-year-old white female presented with signs and symptoms of a partial large bowel obstruction. A barium enema study revealed an obstructing lesion in the sigmoid colon. The patient underwent a left hemicolectomy, and histologic examination of the specimen demonstrated a transmurally invasive, moderately differentiated adenocarcinoma. Tumor spread extended to the mesenteric lymph nodes (Duke's C2 lesion); at the time of surgical exploration, however, the abdominal cavity was free of metastatic disease. Seven months later, a thyroid nodule was discovered along with an enlarged left "supraclavicular lymph node." The latter lesion, measuring 1 x 1 cm, raised the overlying skin and was firm, tethered to the subcutaneous tissue, and nontender. Excisional biopsy of the "lymph node" revealed moderately differentiated adenocarcinoma, consistent with the primary colonic tumor (See Figs. 1-3).

Discussion

The overall incidence of cutaneous metastases from visceral carcinomas ranges from 0.1% to 9%. The incidence of cutaneous metastases from colon carcinoma is less than 4%. These figures are estimated values, derived from autopsy studies. The wide range reported of incidences of cutaneous metastases from visceral carcinomas reflects several factors. Variability in data collection is probably the main source of error in estimating incidences. The authors of several studies autopsied all patients dying with a known malignant tumor, while others autopsied all patients dying in a particular institution. A 1987 study, for example, documented 677 cases of cutaneous metastases in 7,518 cases of cancer (9%). This study, performed at a cancer specialty center, is therefore biased towards patients whose disease advanced to the point of requiring hospitalization.[1-5]

Changes in cancer epidemiology strongly contribute to the disparity of reported incidence as well. The incidence of cancer has increased since most studies in the literature were performed. Additionally, advances in oncology and supportive care have increased survival time, thus permitting the development of later manifestations of cancer, among which are cutaneous metastases. Therefore, the actual incidence of cutaneous metastases from colonic carcinomas may have increased.[1,3,6]

The incidence of cutaneous metastases roughly parallels the sex-related incidence of the associated primary neoplasm in the general population. Lung carcinoma, the most commonly occurring neoplasm in men, is the most common source of cutaneous metastases in men (24.3%). Similarly, breast carcinoma, the most commonly occurring neoplasm in women, is the most common source of skin metastases (69.4%). Lung carcinoma, however, which is responsible for the greatest number of cancer deaths in women, metastasizes to the skin in only 4% of cases. Prostatic carcinoma, with an incidence nearly equal to

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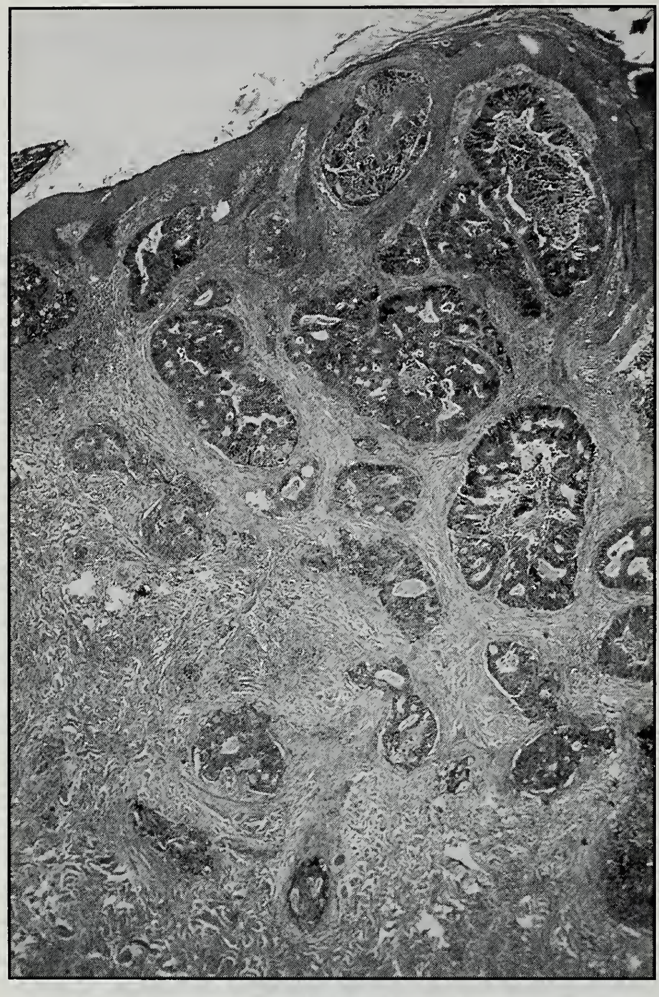

Figure 1: Skin nodule demonstrating adenocarcinoma, x20. Note the typical architectural pattern of an intact overlying epidermis with tumor in the deep dermis and subcutaneous fat.

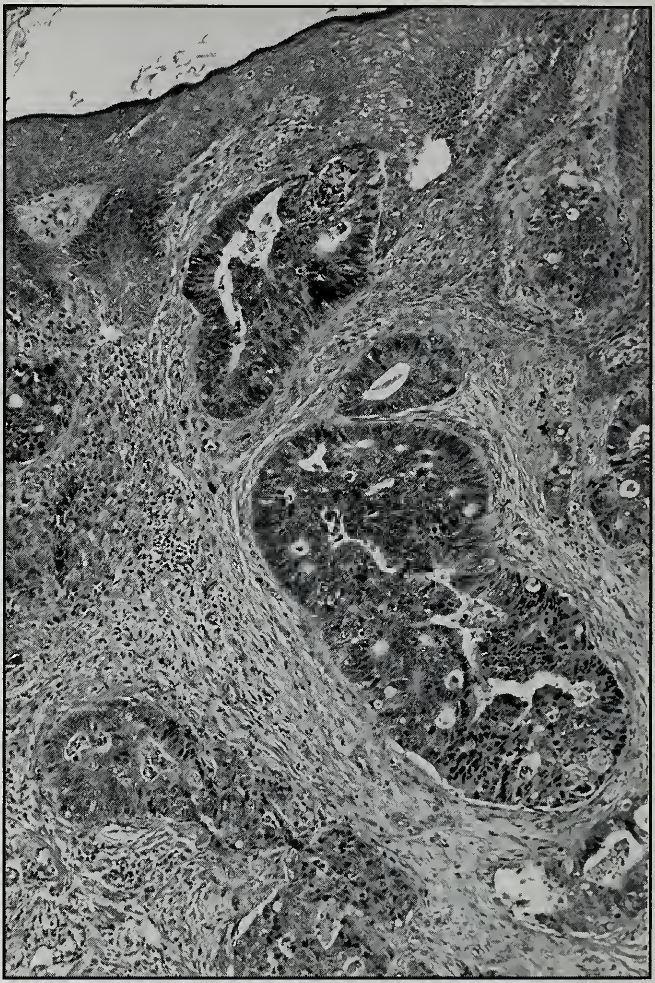

Figure 2: Skin nodule demonstrating moderately differentiated adenocarcinoma, x75. Note the glandular pattern of atypical cells. There is reactive desmoplasia in the surrounding connective tissue.

that of lung cancer among men, also rarely metastasizes to the skin. The inconsistencies between the reported incidences of cutaneous metastases in females may be partly explained by the fact that several studies were performed at Armed Forces and Veterans Administration hospitals and had relatively few female subjects; the reported percentages may thus be unreliable.[4,5]

Colon carcinoma is the second most frequent source of cutaneous metastases in both men and women, occurring in 18.7% and 9.1% of cases, respectively. It is not understood why the incidence of cutaneous metastases does not parallel the sex-related incidence for colon carcinoma, which is roughly equal for men and women. Melanoma, as noted previously, is the third most common source of skin metastases in both sexes, accounting for 13% of cutaneous metastases.[1-4]

Carcinomas metastasize through one of four pathways: direct seeding of body cavities or surfaces, lymphatic spread, hematogenous dissemination, and iatrogenic transplantation.[7] Colon carcinoma is believed to metastasize initially through lymphatics and later through the hematogenous route. Colon carcinoma is also known to metastasize to sites of previous perineal and abdominal skin incisions.[8,9]

Generally speaking, the site of cutaneous metastases varies with the location of the primary tumor and is not neoplasm-specific. Cutaneous metastases most often occur on skin surfaces adjacent to the primary neoplasm. Primary lung and breast tumors, for instance, metastasize to the chest wall and axilla, while gastrointestinal malignancies extend to the cutaneous surface of the abdominal wall.[10]

Cutaneous lesions from colon cancer most frequently occur on the abdominal wall. The Sister Mary Joseph nodule is an example of an abdominal cutaneous metastases from an adenocarcinoma of the gastrointestinal tract. The lesion, which can present as either a subcutaneous nodule or an exophytic, ulcerated umbilical mass, is the cutaneous manifestation of an advanced gastrointestinal carcinoma. The most frequent source is gastric carcinoma, with colon carcinomas accounting for approximately 10%. The lesion is named in honor of the Mayo Clinic nurse who recognized the lesion and its ominous significance.[11,12]

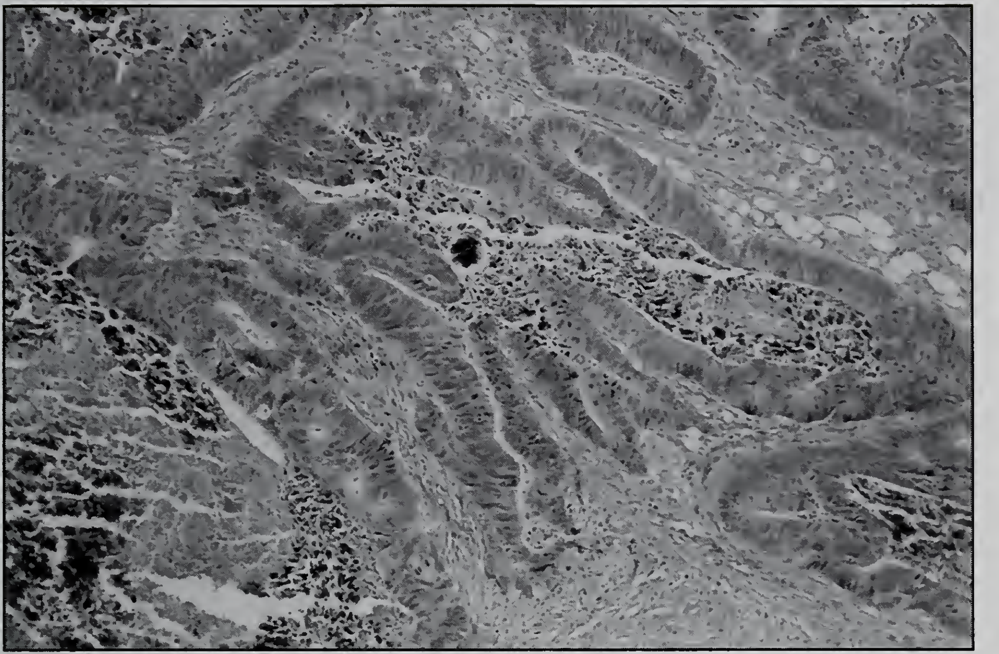

Figure 3: Primary colonic adenocarcinoma.

Other cutaneous sites of colonic metastases, in decreasing order of frequency, include the perineum, upper extremities, chest, back, head, and neck. There are case reports of colonic metastases to the glans penis, tongue, lip, and hand.[13-16]

The clinical appearance of cutaneous metastases is neither distinctive nor diagnostic. The lesions, which can be single or multiple, are firm, nontender, flesh-colored subcutaneous nodules which elevate the overlying skin surface. The epidermis superficial to the lesion is usually intact, although ulceration is occasionally seen. The nodule may be freely mobile or fixed to the subcutaneous tissues. The size ranges from 1 to 3 cm in diameter. Cutaneous metastases usually lack pigmentation; metastatic melanomas can be either amelanotic or blueblack in color. Clinical misdiagnosis of cutaneous metastases is reported, lesions having been mistaken for dermatological conditions including tertiary syphilis, folliculitis, and periarteritis nodosa. This underscores the need for biopsy and histological examination as critical for diagnosis.[17]

Histological appearance is said to be the single most important factor in the diagnosis of cutaneous metastases. The general pattern is similar to the histology of the primary neoplasm, although the cytology may be more atypical or less well-differentiated. The term "cutaneous," although used throughout the literature, actually refers to subcutaneous lesions. On histologic section, neoplastic cells can be seen in the deep reticular dermis and subcutaneous fat, as well as within the blood vessels and lymphatics. A desmoplastic response often surrounds islands of neoplastic cells. A significant inflammatory reaction by the host is frequently absent.[4]

Metastatic spread of colon carcinoma usually occurs within two years of resection of the primary tumor. Systemic metastases involve, in order of decreasing frequency, the liver, peritoneum, pelvis, lung, and bone. Skin metastases usually indicate widespread disease and are a poor prognostic sign. Death usually occurs within one year of identification of the metastatic lesion, with survival ranging from 3 to 7.2 months in most recent series. Longer survival times are described in case reports, including Delaney's report of a 10-year survival following the diagnosis of cutaneous metastases from colonic carcinoma.[17,18]

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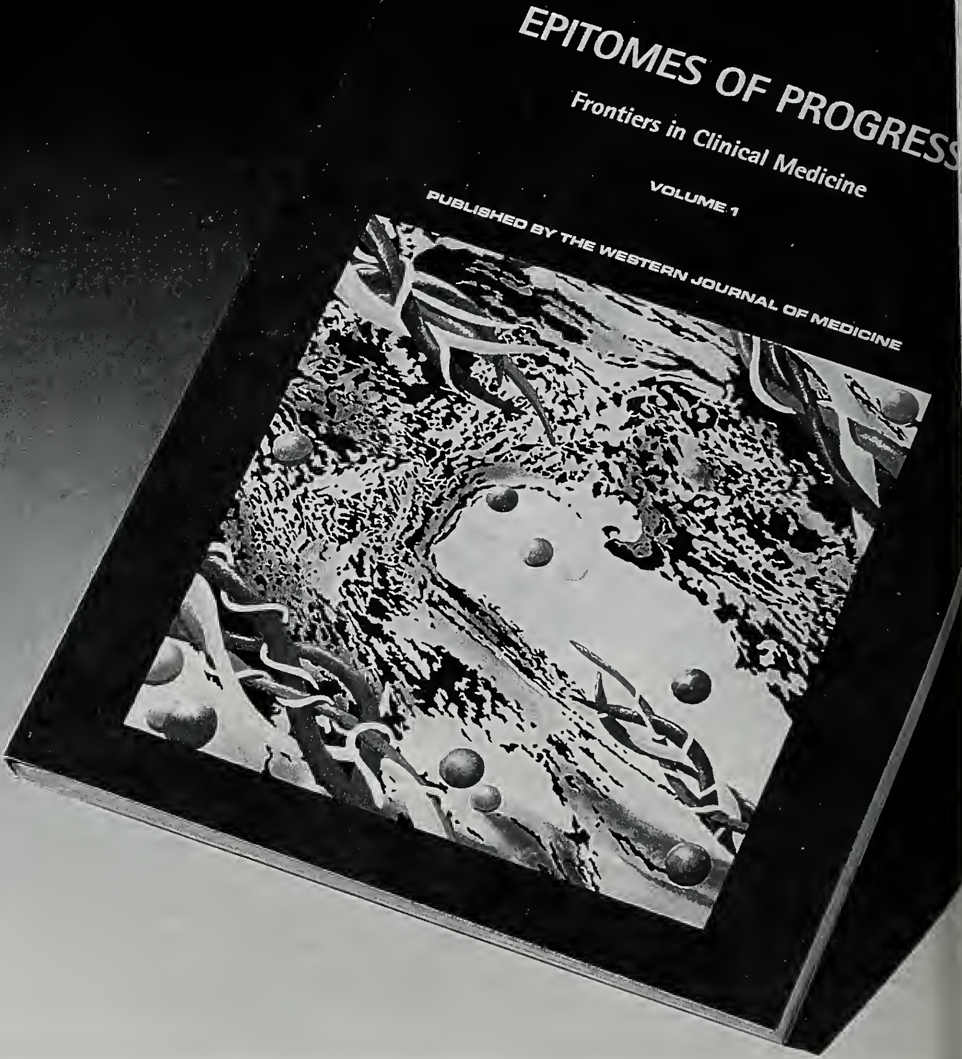
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Important Advances in Clinical Medicine

General and Family Practice

The Council on Scientific Affairs of the California Medical Association presents the following inventory of items of progress in general and family practice. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of these items of progress in general and family practice that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on General and Family Practice of the California Medical Association, and the summaries were prepared under its direction.

Estrogen Replacement Therapy for Reducing Cardiovascular Disease

ESTROGEN replacement therapy has been widely advocated and accepted for use in preventing osteoporosis in postmenopausal women. Yet, a more important effect may be its ability to decrease the incidence of cardiovascular disease in these women. Whereas premenopausal women have myocardial infarctions at a rate much lower than that of men of the same age, the rate of myocardial infarction in women in the first ten years after menopause approaches that in men. Myocardial infarction becomes the leading cause of death in women older than 50.

At least 16 prospective studies have reviewed the effects of exogenous estrogen on the risk of myocardial infarction. The Nurses' Health Study, which observed 121,700 married female registered nurses for ten years, established a 44% reduction in the risk of coronary artery disease for those women on estrogen replacement therapy. The Lipids Research Clinic study observed more than 2,000 women for nine years, and the death rate for cardiovascular disease for women on estrogen replacement therapy was a third of that for women not receiving therapy. The protective effect of estrogen replacement was not modified by smoking, alcohol use, obesity, or high blood pressure.

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The exact mechanism by which estrogen replacement provides protection to postmenopausal women is not well understood. Estrogen does have a favorable effect on serum lipid profiles by increasing high-density lipoprotein (HDL) levels while decreasing total cholesterol and low-density lipoprotein levels. Women in the Lipids Research Clinic study had HDL levels 9 to 12 mg per dL (0.23 to 0. 31 mmol per liter) higher than did nonusers. Reviewing data from the Framingham and the Lipid Research Clinic studies suggests that an increase in HDL levels of about 10 mg per dL (0.26 mmol per liter) is associated with a 50% to 60% decrease in cardiovascular risks. Other hypotheses for the protective effect of estrogen therapy include a reduction of endothelial hyperplasia and atherosclerosis, in addition to an enhanced production of prostacyclin.

When considering estrogen replacement, it is important to balance the risks versus the benefits of therapy. Whereas estrogen is definitely associated with endometrial cancer and an increased incidence of gallbladder disease, its relationship to breast cancer is controversial. In contrast to the use of oral contraceptives, estrogen replacement has not been associated with an increased incidence of venous thrombosis, thrombophlebitis, or pulmonary embolism. In addition, some studies have shown that postmenopausal estrogen replacement does not raise systolic or diastolic blood pressure in normotensive or hypertensive women.

Absolute contraindications to estrogen replacement therapy include acute liver disease or previously diagnosed breast or endometrial cancer. Relative contraindications include chronic liver disease, obesity, and a history of thromboembolism.

The possible benefits and risks to the cardiovascular system associated with the addition of progesterone to estrogen replacement have not been clearly defined. Although progesterone has been shown to decrease HDL levels, a recent study indicates that women using both estrogen and progestin had the same reduction in cardiovascular risk factors as women using estrogen only. On the other hand, another study reported that while the sequential use of estrogen and progestin had a favorable effect on the lipid profile, the effect was less than that of using estrogen alone. Any possible effect of progestins on cardiovascular risk is likely to be related to the dose and duration of the therapy.

Estrogen replacement has long been advocated for the prevention and treatment of osteoporosis. Newer information indicates that it may have an even more important role in preventing life-threatening cardiovascular disease. The protective nature of estrogen on the cardiovascular system should provide a strong impetus for lifelong therapy. By educating and encouraging patients to consider estrogen replacement therapy, physicians may substantially contribute to a reduction of the risk of cardiovascular disease in their postmenopausal women patients.

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Sleeping Position and Sudden Infant Death Syndrome

THE sudden infant death syndrome (SIDS) is defined as the sudden and unexpected death of an infant in whom a thorough postmortem examination does not show an adequate explanation for death. It is the leading cause of death for infants beyond the perinatal period to 12 months of age. The peak incidence of sudden infant death is from two to four months of age; 80% of cases occur before age five months. Two of 1,000 infants die of SIDS. African Americans and Inuits appear to be at the greatest risk for SIDS and Asians and whites at the least risk.

Epidemiologic studies have identified the following risk factors for the syndrome: prematurity, birth weight low for gestational age, low Apgar scores, inadequate prenatal care, low socioeconomic status, mother younger than 21 years, mother using illicit drugs during pregnancy, and siblings died of SIDS. Several studies have recently reported a striking association between SIDS and sleeping in the prone position. A study from Avon County, England, found a relative risk of 8.8 for sleeping in the prone position. This same study found overheating (by clothing and bedding) to be an independent risk factor for sudden infant death. Studies from the Netherlands and Australia have corroborated this association between SIDS and sleeping prone.

Following the discovery of this association, health care professionals in Avon County altered their advice on sleeping position for infants, recommending instead the side or supine positions—except in infants with chronic gastroesophageal reflux or certain congenital deformities, such as the Pierre Robin syndrome. A follow-up study found that the prevalence of prone sleeping fell from 58% to 28% and the incidence of SIDS fell from 3.5 per 1,000 to 1.7 per 1,000.

The reason for the association between the prone sleeping position and SIDS is unknown, but some researchers have shown the likelihood of suffocation by rebreathing expired air in infants sleeping prone on certain types of infant bedding, particularly those that are excessively soft and malleable.

The pathophysiology of SIDS remains a riddle. Primary care physicians should encourage their patients to receive prenatal care and forego smoking and drug abuse. Current research suggests that physicians should counsel parents to avoid "bundling" infants with excessive clothing and blankets and to recommend placing infants without contraindications in the supine or side positions to sleep.

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Outpatient Management of Asthma

PRIMARY care physicians have been asked to help reduce the morbidity and mortality of asthma in the 1990s. In response to the almost 30% rise in asthma prevalence and mortality between 1980 and 1987, the expert panel of the National Asthma Education Program has issued guidelines to improve the detection and treatment of asthma.

Asthma is a chronic condition with acute exacerbations. It is now considered an inflammatory disease in which bronchospasm occurs because of airway inflammation. Treatment requires a continuous care approach to control symptoms, prevent exacerbations, and reduce chronic airway inflammation. The education program's guidelines place emphasis on anti-inflammatory therapy through the use of inhaled corticosteroids and inhaled cromolyn sodium as first-line therapy for moderate to severe asthma.

Clinicians must use objective measures of pulmonary function, such as a home peak-flow meter, to assess and monitor each person's asthma. With appropriate pharmacologic therapy, environmental control, and education, patients and their families can achieve control of this condition. Just as people with diabetes mellitus on insulin therapy can monitor their blood glucose levels at home, patients with asthma can objectively monitor their condition by measuring peak expiratory flow rates at home. By taking regular measurements, patients with moderate to severe asthma can prevent severe exacerbations by early intervention. Measurements are obtained at 7 AM and 7 PM each day, as well as before and after the inhalation of bronchodilators. When the peak expiratory flow rate is between 80% and 100% of the patient's personal best, no changes are needed. When it drops to between 50% and 80% of personal best, a temporary increase in medication is needed. When the peak expiratory flow rate falls to less than 50% of baseline levels, bronchodilators are used immediately and the patient's physician notified if the rate does not rise at once and stay at higher levels.

In severe exacerbations, airflow obstruction needs to be rapidly reversed. In young, otherwise healthy people with asthma, emergency department or office treatment initially involves inhaled b-agonists every 20 to 30 minutes, up to three doses. This closely spaced regimen for acute exacerbations produces incremental bronchodilation with each successive inhalation. The use of parenteral corticosteroids is recommended if the patient's symptoms fail to resolve after this treatment.

Patient education has moved to the forefront of outpatient asthma management. Those skilled in self-management can achieve some control over their lives and their condition. It has been shown that early treatment is most effective. Home management of acute exacerbations avoids delays in initiating therapy. Patients require instruction on the correct use of medications, and the use of spacers with inhaled medications often augments this. Patients with moderate to severe asthma should keep diaries to record home peak expiratory flow rates and to document symptoms. All patients should have a written action plan to be followed in the event of an acute exacerbation. Each person's optimal management strategy evolves over time and benefits from the objective data offered by home measurements of peak expiratory flow rates.

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Practical Approach to Diagnosing and Treating Sinusitis

SINUS disease is one of the most prevalent chronic diseases causing widespread morbidity and economic hardship, and yet it is one of the most difficult diseases to diagnose with objective criteria.

The following types of recurrent episodes of sinus-associated symptoms indicate the need for a more detailed diagnostic workup: symptoms that interfere with daily living, episodes recurring more than three to four times per year, symptoms that are not controlled by nonpharmacologic measures (such as steam inhalations or saline-solution sprays) or over-the-counter medications, more than one anatomic site in addition to the sinuses are affected by symptoms (ears, teeth, eyes, or brain), and sinus disease being associated with other problems (such as exacerbations of asthma).

The workup of patients with these symptoms may include plain sinus radiographs. Sinus films are helpful in patients with maxillary sinusitis in whom there is evidence of sinus mucosal thickening greater than 6 mm, but they are not helpful in the diagnosis of ethmoid sinusitis. Computed tomography is currently the diagnostic test of choice to diagnose recurrent sinusitis. It is crucial to request coronal sections with bone-window settings of the ostiomeatal complex. Limiting the scan to this region will focus the scanner on the most likely pathologic area and also reduce the cost of the study to $100 to $200 per scan. Fibrotic rhinoscopy, done by a skilled practitioner, can help locate abnormalities, such as nasal polyposis or subtle changes in lymphoid tissues, in the posterior nasal passages and nasopharynx. Allergy skin testing is appropriate only if the history is consistent with allergic disease—seasonal exacerbations, exacerbations to specific environment exposures, worsening asthma, and so on.

If chronic disease is found, the following medical regimen should be instituted. A broad-spectrum antibiotic—amoxicillin, 500 mg three times a day, or the combination of trimethoprim and sulfamethoxazole, double strength, twice a day—should be prescribed for a minimum of 21 days. In children and recalcitrant adult cases, the combination of amoxicillin and clavulanate potassium should be used to treat *Moraxella (Branhamella) catarrhalis* infection. Patients should receive topical nasal corticosteroids—beclomethasone dipropionate, flunisolide, or budesonide—to decrease ostial inflammation and increase the sinus ostial diameter to enhance sinus drainage. High-dose guaifenesin and oral a-adrenergic agonists should be given to thin respiratory secretions and to increase ostial patency, respectively. An attempt should be made to promote continued sinus drainage after symptoms resolve. Saline solution and steam can help liquefy secretions and increase mucociliary clearance, especially in the ostiomeatal complex. Finally, in chronic sinusitis where anatomic anomalies are the cause or soft tissue masses persist, surgical therapy is the best approach.

Because adequate objective criteria to diagnose this common ailment are not available, physicians need to rely on clinical intuition. It is important to note that other, less common, underlying causes of sinusitis need to be considered, including cystic fibrosis, immotile-cilia syndrome, and several immunocompromised states, in particular immunoglobulin A deficiency. In addition, undiagnosed and untreated sinusitis can be associated with severe, albeit rare, complications, such as subdural or epidural empyema (frontal sinus), brain abscess (frontal), meningitis, cavernous sinus thrombosis (sphenoid), osteomyelitis (frontal), and orbital cellulitis (ethmoid). Although sinus roentgenograms have been shown to have as high as a 40% false-negative rate, the lateral and Caldwell views may be helpful in diagnosing sphenoid, frontal, and ethmoid sinusitis. Finally, in resistant chronic sinusitis, not only is there an occasional indication for sinus aspiration and irrigation, but an initial four- to five-day burst of oral steroid therapy, to decrease mucosal edema and encourage drainage, and antibiotic therapy, including cephalosporins (such as cefaclor) for as long as three to six weeks may be required for adequate treatment.

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Health and Medical Care of Homeless Persons

FAMILY practitioners and general internists provide most of the health care to the three million homeless people in the United States. Recent studies have enhanced our ability to provide medical care to these people by delineating their health problems and the barriers to medical care that they face.

Homeless people are generally sicker than others. A third of homeless adults have chronic serious mental illness; the same proportion have substance abuse problems. A third of homeless children have developmental delay, and the same number are depressed. A third of homeless adults and half of homeless children have at least one physical illness. Diseases of the following organ systems predominate: upper respiratory, cardiovascular, dermatologic, female genitourinary, gastrointestinal, peripheral vascular, musculoskeletal, dental, and ophthalmologic. Homeless women have inadequate reproductive care, and only 30% use birth control. They are more than twice as likely as poor women with homes to be pregnant; more than half have inadequate prenatal care. In addition, they are twice as likely as poor women with homes to give birth to an infant with a low birth weight (16%), and they have twice the infant mortality rate (25 deaths per 1,000 live births).

Contagious disease is rampant among the homeless. In New York City, more than half of men at homeless clinics had a skin test positive for tuberculosis, and 45% were positive for the human immunodeficiency virus. Despite their high prevalence of illness, half of the homeless say that they did not obtain needed medical care in the previous year.

What should a practitioner do with this information? First, all impoverished patients should be assessed for their housing status. When the homeless do request medical care, they should be given a careful history, complete physical examination, and age- and sex-appropriate health screening. These patients should be assessed for mental health and substance abuse problems, physical and sexual abuse, dental health, and vision and podiatry problems. Appropriate immunizations should be administered, and homeless patients should be screened for tuberculosis.

To reduce homeless persons' barriers to care and compliance, health professionals should be sensitive to the problems of homelessness and trained to manage illness in persons who have no place to stay. Clinics need to be near areas where homeless people live. Walk-in clinic appointments and providing some medical care in outreach settings are essential. Simple and quick laboratory testing should be done in the office, but relationships should be established with local hospitals and laboratories to do more extensive diagnostic evaluations. Free medications available on-site would enhance compliance with a medical regimen. Given their many problems, primary care, mental, substance abuse, dental, optometry, and social services should be provided on-site or in nearby facilities. Transportation to referral sites may be required. Respite care might prevent hospital stays for problems that could be treated if a homeless patient had a home.

Most homeless persons will respond to medical treatment if it is provided in an atmosphere of trust and respect. It is difficult to attract physicians to centers that care for homeless people. Medical students' interest in caring for the poor would be fostered by exposing them to role models and clinical experiences that provide care to the homeless and other impoverished groups.

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Practice Guidelines Movement

"CLINICAL policies," "practice guidelines," and "practice parameters" are synonyms for one of the current trends in medicine. Many clinicians resist this movement, fearing that the development of these policies will transform medical practice into nothing more than "cookbook medicine." Fears of medicolegal liability, the uncertain response of insurers, and confusing terminology intensify this resistance. What do these policies mean? What if two policies conflict? What if a clinician does not agree with the policy? These important questions can be addressed by reviewing the way guidelines are developed and ways to determine their flexibility.

More than 1,000 policies are either in place or under development. Many different groups, from federal agencies to specialty societies to private groups, continue to develop new policies. Clinical policies are preformed recommendations designed to help clinicians make decisions about the management of patients. Policies are not a new medical phenomenon; they are a classic method of disseminating information. Informal clinical policies include "treat strep throat with penicillin," "obtain a yearly mammogram," "once a cesarean section, always a cesarean section," and other clinical pearls passed down through hospital rounds and textbooks. Popular examples of formal policies include the United States Preventive Services Task Force's *Guide to Clinical Preventive Services,* the cancer screening recommendations from the American Cancer Society, and the findings of any National Institutes of Health consensus conference. Any clinical policy—for example, the one on cesarean deliveries—may need modification when more data become available.

Clinical policies can be based on one of two approaches. In a consensus conference, experts meet to discuss the current state of knowledge. The evidence and exact rationale for the experts' recommendations are often obscure. More recently, an explicit approach has increased in popularity. This is important because the explicit approach allows clinicians to determine how to apply a policy to patients in their practice.

The explicit approach requires knowledge in three areas: all relevant health effects, including benefits and harms; all financial costs and savings; and patient preferences. Usually an extensive literature review serves as the source of all data, but occasionally new data are developed. Patient preferences for the various treatment options or outcomes are assessed. Finally, the data are formally analyzed and the recommendations published. The explicit approach, while resulting in high-quality recommendations, is expensive. Developing a high-quality policy generally takes thousands of hours over two to three years.

A scheme has been suggested for rating the flexibility of a clinical policy, that is, how strong the recommendation should be. A policy is a "standard" if the consequences are well known and there is virtual patient unanimity about the value of the recommendation. Few guidelines carry this strict level of flexibility. The policy on treating severe hypertension can be considered a standard. A policy is a "guideline" if the consequences are sufficiently understood to permit decisions and the recommendation is preferred by many but not all patients. The policy on mammography after age 50 years is a guideline. A policy is an "option" if the outcomes or patient preferences are not known or if patients are either evenly divided or indifferent. The policy on treating moderate hypercholesterolemia is considered an option because of the lack of data on patient preferences as well as current controversies over the possible adverse effects of lowering cholesterol levels.

The perceived rigidity of clinical policies causes many physicians to resist the entire movement, fearing that such rigidity will interfere with the patient-physician interaction. By incorporating a flexibility rating, however, these clinical policies offer physicians the latitude to use clinical judgment while identifying those recommendations with clear and powerful evidence. Certain potential concerns related to clinical policies are well founded, and the American Academy of Family Physicians is a leader in the field to help protect patients from the misuse of these policies by nonclinicians. Still, the comprehensive assessment of a clinical problem afforded by a clinical policy can give physicians insight into the optimal care of patients.

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Universal Hepatitis B Childhood Vaccinations

THE Centers for Disease Control and Prevention Immunization Practices Advisory Committee recommended universal childhood hepatitis B immunizations in November 1991. The initial reaction by physicians and the various professional societies was guarded, but most professional organizations have now made similar recommendations.

Hepatitis vaccine was introduced in 1982. Early hepatitis B vaccination efforts focused on high-risk populations. Despite these efforts, it is estimated that 200,000 to 300,000 new cases occur each year in the United States. Each year nearly 5,000 people die of chronic liver disease due to hepatitis B virus (HBV), and more than a million people have chronic infection and are potentially infectious to others. The immunization of high-risk groups will remain a cornerstone of efforts to control this disease until universal childhood immunization results in control.

Infants and children younger than five years have special risks related to HBV infection. Infants infected in the perinatal period have a 90% risk of chronic infection. Those not infected at birth from infected mothers remain at high risk for acquiring the infection. In addition, horizontal person-to-person transmission has been shown to occur among children in populations where HBV is endemic. Children infected in the first five years of life have as much as a 60% risk of becoming carriers. It is estimated that 25% of children with chronic HBV infection will die of chronic liver disease as adults.

Each person in the United States faces a 5% lifetime risk of HBV infection. This risk makes universal vaccination of infants probably cost-effective when comparing the cost of vaccine and its administration with the medical and work-loss costs associated with the disease. It has been estimated that each dollar spent on vaccination will save between $7 and $14 in medical and work-loss costs.

Several schedules have been recommended depending on the HBV status of the mother, the vaccine used, and individual vaccination practices. Generally half the adult dose (a fourth to half for Recombivax HB) is administered at birth (with hepatitis B immune globulin given if the mother is HBV infected). The second dose is administered a month or two later, and the third dose four or more months thereafter to obtain optimal antibody levels. The question of the need for a booster dose is not resolved, but protective levels of antibody are present for at least five years. The possible need for booster doses will be assessed as additional information becomes available.

Effective 1 December 1992, and 1 January 1993, respectively, California and Nevada Medicaid programs began paying the costs of childhood hepatitis B vaccination.

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Increased Surgical Options for Dysfunctional Uterine Bleeding

HYSTERECTOMY for dysfunctional uterine bleeding remains a common and expensive treatment. Because 50% of the uteruses removed for this reason are histologically normal, techniques are being developed to treat the target tissue, the endometrium, rather than remove the entire organ.

Endometrial ablation has been studied for more than 100 years, but technologic improvements in the past 10 to 15 years have now shown consistent results with low morbidity. First, instruments for endometrial aspiration done in the office have shown results equal to those of dilatation and curettage in the diagnosis of endometrial carcinoma. Second, hysteroscopy now permits direct visualization of the endometrium to ensure thorough ablation. Third, laser or electrosurgical devices provide effective and safe ablation.

The laser techniques cauterize the endometrium while the procedure is viewed through the hysteroscope. A review of the results of different studies over the past decade involving more than 1,000 patients showed an 88% to 97% success rate, with failure being defined as requiring a subsequent procedure or a hysterectomy. Electrosurgical equipment such as a urologic resectoscope (such as used for transurethral resection of the prostate) or a roller-ball electrode may also be used. Both use electrical current to cauterize the endometrium down to the basement membrane. Several studies, with results from hundreds of patients, reported success rates of 86% to 97.5%. The resectoscope also gathers tissue for histologic study and can be used to remove small submucosal fibroids.

Endometrial ablations can be done as outpatient procedures with shorter recovery times than for hysterectomies. As their availability increases throughout the country, primary care physicians will be able to offer patients procedures that are less uncomfortable, disruptive, and costly than a hysterectomy when medical therapy is unsuccessful.

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Changing Guidelines for Screening Mammography

BREAST cancer is the most common cancer among women in the United States with each year about 175,000 new cases diagnosed and 44,000 deaths. Recommendations for screening mammography in asymptomatic women are made with the goal of reducing mortality through early detection and intervention.

Since 1980, the American Cancer Society (ACS) in conjunction with the National Cancer Institute has recommended yearly mammography for asymptomatic women older than 50 years. Controversy has surrounded recommendations for screening women from 40 to 49 years. Concerns have included a marginal cost-benefit ratio and lack of data to support decreased mortality among younger women when cancer is found by mammography. Supporters of annual screening in this age group point to the relative aggressiveness of cancer that occurs in younger women.

In 1983, based on data from the joint ACS/National Cancer Institute Breast Cancer Detection Demonstration Project and long-term follow-up from the Health Insurance Plan of New York study, the ACS guidelines were revised to include screening mammography every one to two years from 40 to 49 years of age. At that time, the ACS also recommended a baseline mammogram for future comparison for women between ages 35 and 39.

Guidelines were again revised by the ACS and published in August 1992 after a consensus meeting of 12 health care organizations was convened by the American College of Radiology to develop a uniform set of recommendations for breast cancer screening. The new guidelines reconfirm the use of screening mammograms on a yearly basis for women older than 50 and every one to two years for women from 40 to 49 years old.

Not all organizations have endorsed the recommendations for screening women younger than 50 years. The United States Preventive Services Task Force does not endorse routine mammography for women aged 40 to 49 unless they fall into a high-risk category based on family history. The recently published five-year follow-up results from the Canadian National Breast Screening Study do not show a decreased rate of death from breast cancer in the women from age 40 to 49 in the group screened by mammogram despite the increase in early detection.

The recommendation for a baseline mammogram at age 35 to 39 years has been deleted from the ACS guidelines.

Screening guidelines are intended to provide a uniform framework for health care professionals in which to recommend mammographic breast cancer screening for asymptomatic women. These recommendations are not static and may need to be revised in response to studies that clarify the effect of early detection and intervention on the natural history of breast cancer.

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Comments of Connecticut State Medical Society Concerning Proposed Practitioner Fee Schedule Regulations Before the Workers' Compensation Commission

23 September 1993

The Connecticut General Assembly passed legislation last session reforming the workers' compensation system. One provision of that legislation mandated the establishment of a medical fee schedule for the workers' compensation system by 1 October 1993. In response to that mandate, Workers' Compensation Commission Chairman Jesse Frankl relied upon the work and advice of his Medical Fee Advisory Group, of which the Connecticut State Medical Society was a member, and published proposed regulations for a medical fee schedule in the 31 August 1993 Connecticut Law Journal. A public hearing on those regulations was held on 23 September 1993. The following is testimony submitted by the Connecticut State Medical Society at that public hearing in support of those regulations.

THE Connecticut State Medical Society (CSMS) presents these comments before the Workers' Compensation Commission in support of proposed regulations establishing a Practitioner Fee Schedule. If established at a fair and equitable percentile level and properly adjusted to reflect global billing, CSMS believes that a Practitioner Fee Schedule implemented under these regulations can provide a reasonable system-wide resolution of the serious medical claims review and payment problems. To be an effective solution, such Practitioner Fee Schedule must be adopted together with the proposed Practitioner Billing and Payment Guidelines and the Disputed Prior Claims Resolution and Order.

Background

The underlying problems addressed by these proposed regulations commenced in July of 1990 when third-party review companies employed by Workers' Compensation payors began issuing reductions and denials of physician claims for payment. These claim determinations often appeared arbitrary and without basis, and CSMS members seriously questioned the authority of reviewers and payors to make such reductions. An analysis performed by Medricon, Inc., the CSMS technical consultant, disclosed problems in the claims review determinations. Reviewers often "downcoded" upper level office services to lower level services for payment and disregarded physicians' requests to recognize extra expense in unusually complicated cases. Payment amounts in some cases seemed arbitrarily low, and Medricon questioned the lack of methodology for incorporating updates to approved payment amounts. There also has been no recognition of charges for postoperative care based on imposition of global surgery fees.

In short the activities of review companies in Workers' Compensation led many physicians to question seriously the fairness of payment for physician services, resulting in large numbers of complaints being filed with the Commission.

CSMS approached former Chairman Arcudi in late 1991 and proposed that some system-wide solution be developed to what had become a crisis in physician billing and payment. This led to appointment of the Connecticut Workers' Compensation Medical Fee Advisory Group. CSMS representatives devoted many hours and resources to support the cooperative efforts of this Advisory Group to create a fair solution.

The Compromise Solution

Subject to the concerns discussed in these comments, CSMS supports Chairman Frankl's proposal to adopt the Practitioner Fee Schedule regulations to satisfy the requirements of Public Act 93-228. If implemented at a reasonable level (see discussion below) and updated annually, the Practitioner Fee Schedule should avoid the disastrous effects of fee schedules in other states where fees have been set too low and not properly updated. The overall payments to physicians following initial adoption of the Practitioner Fee Schedule should be "budget neutral." The inflation cap imposed in Public Act 93-228 will limit growth in future physician fees to the annual increase in the Consumer Price Index For Urban Workers.

It is critical to recognize that the level of physician fees in Connecticut, on average, has not been identified as a problem in Workers' Compensation. Occasional abuses of the system result primarily from utilization issues that apply to a few practitioners and will be dealt with through developing protocols and other utilization review activities and through removing such practitioners from the Chairman's approved list.

Of great concern to CSMS are several key issues that were not resolved by the Advisory Group and presently are left open in the proposed regulations. These are (1) the Percentile Payment Designation, (2) a One-Time Adjustment in Surgical Fees for Global Billing, and (3) a Mechanism for Resolving Prior Claims.

CSMS has cooperated and compromised in developing a Practitioner Fee Schedule based on assurances that the schedule adopted will be fair and equitable for physicians. To achieve a fair system, the following components must be included:

1. Percentile Payment Designation —80th Percentile

As noted, all future increases in medical fees have been limited by the legislature to the annual percentage increase in the Consumer Price Index For All Urban Workers. This means that after the first year, even the most fair fee schedule will immediately fall behind in reflecting actual increases in costs incurred by physicians in their office practices. It is therefore extremely critical that the initial Practitioner Fee Schedule be established at an equitable percentile level. As explained below, based on analyses provided by Medricon, CSMS believes that the Practitioner Fee Schedule must be established at the **80th percentile.**

It is essential that Chairman Frankl, in establishing the percentile level, have a full and informed understanding of the standard way in which percentile levels are used to set payments for medical procedures in the health insurance industry. It is critical to understand what a "percentile" level represents relative to the "usual, customary and reasonable" equivalent standard that governs Workers Compensation payments. In the following paragraphs we outline how payments for medical procedures are set in the health insurance industry so that they are defensible as "usual, customary and reasonable."

It is standard in the health care industry among large third party payors of medical fees-whether Workers' Compensation payors, general health, or auto or accident—to purchase medical charge data from a major, established medical data firm (ie HIAA, MDR, McGraw-Hill) and to use them for determining payment amounts for procedures. Such data firms have established reputations for producing very large medical data bases which meet exacting standards. On the other hand, data which individual payors assemble internally from charges submitted often hold a high risk of statistical anomalies. Thus, these data are avoided for purposes of setting payments for medical procedures, since even small anomalies in the data can be reflected in significant overpayments or underpayments.

The data bases available from the major medical data firms include large frequencies of charges, giving the user confidence that the data are the best possible to represent accurately the overall universe of medical charges. It should be noted, though, that many payors, especially self-insured, non third-party payors, find purchasing a data base from an outside source to be too expensive, often costing thousands of dollars. Such payors often simply pay charges at 100%, since they have no way of making usual / customary / reasonable determinations.

Third party payors who use medical data to set payment amounts analyze the data to derive the "percentile level" which represents the "usual, customary and reasonable" charge in the community, and they set their payments for medical procedures under their health insurance plans accordingly. A "percentile" is the specified data point on a data distribution which is greater than or equal to a designated percentage of all the remaining data elements in the distribution. Thus, the 80th percentile of a distribution of 100 data elements is that point which is greater than or equal to 80 other elements. Please note that a *percentile* does not equal a "*percentage*" of anything, and especially not of the largest data element in the distribution, as is a common misconception. A "percentage" is a fractional part expressed in hundredths. Thus the 80th percentile is not 80% of anything.

Since the concept of percentiles is basic to understanding how payments for medical procedures are determined in the health insurance industry, we further illustrate it in the examples that follow.

The one fee case—In any sample of data elements where all elements are equal, all percentile levels would also be the equal. Thus, a change in the "percentile" would bring no change in the value. This example is important for showing that a "percentile" is not a *percentage* of anything.

The distribution of 3 data elements—In small data bases, anomalies in the data cause vast differences in percentiles. If a sample of three data elements were drawn from a population, as follows:

10 20 100

The 50th percentile is 20. However, if the sample of three had been drawn as follows:

10, 90, 100

Then the 50th percentile would be 90. As seen, based on just one data element being different between these two cases, a vast difference in the 50th percentile results. This is why using a large data base is essential. In a large data distribution, there are enough data elements that the user can be confident that the amounts it designates for given percentile levels do in fact reliably represent percentiles in the real universe of charges. In fact, by adopting a statewide schedule in Connecticut, the number of data elements will be greatly increased.

The examples that follow concern large data bases. When data from large data bases are plotted, generally a clear curve emerges where the data elements cluster into a narrow range and where the maximum number of data elements are concentrated (as measured by standard deviation or variance). The center point of such a curve is called the point of inflection.

For medical fee data, this point is where market pricing is maximized, and it is generally used as "usual, customary, and reasonable" since taking all data elements within one standard deviation of the point includes the maximum number of data elements. No other point is so representative.

The normal distribution—In the "normal distribution," data elements do not represent random scatter, but rather when plotted they yield a pronounced, perfectly symmetrical curve, the classic "bell shaped curve." In this unique case, the point of inflection is the 50th percentile. However, often the misconception arises, that the 50th percentile is an appropriate "midpoint of the data" for *any* data distribution, including for the skewed curve. As shown in the following example of the skewed distribution, this is not the case.

The skewed distribution—In the skewed distribution, as with the normal distribution, data elements are not randomly scattered, but when plotted yield a curve. However, the point of inflection in the skewed curve is *something other than* the 50th percentile. When plotted, these data show a long gradual tail at one end, with clustering of data at the other end, producing a curve that is not centered. However, in the curved part of the distribution, the largest number of fees are still found in the smallest interval, and as with the normal distribution, taking all data elements within one standard deviation of the point of inflection, includes the maximum number of data elements. Thus, in the skewed distribution, the point of inflection is still considered the best representation of the data as a whole, even though it is something other than the 50th percentile.

Any analysis of physician charges reveals that they are not set uniformly, but rather they reflect considerable variation which when plotted, fits a pronounced "skewed curve." A pronounced cluster of data elements is seen at the upper end of the graph where the fees charged clump together and where increments between the points is very small. This clustering represents the fees charged by those who perform the procedure most. Thus, despite variation, a large part of physician fees group into a very narrow range, and this represents the market-determined usual, customary, and reasonable pricing.

As previously indicated, by taking all data elements that lie within one standard deviation of the point of inflection, you will include more of the data than you can within one standard deviation of any other point. For this reason, the percentile at which dispersion is minimized (the point of inflection) is used by insurers as representative of the "usual / customary / reasonable" charge. For medical fees, this is generally found between the 75th to the 85th percentile of physician charges.

The remainder of charges, which clearly lie outside the curved part of the range, show considerable scatter, and produce a very gradual tail-off at the lower end (representing fees charged by new practitioners, and those performing the procedure less frequently). To base payments on the 50th percentile in the case of such skewed data, would be to ignore the skewed dispersion, and the fact that there is some general market pricing which characterizes those who perform the procedures most frequently.

Based on MDR data reviewed by CSMS technical consultants, CSMS recommends that the Practitioner Fee Schedule be established at the 80th percentile. Although adopting a uniform fee schedule will result in fee reductions for some physicians and increases for others, CSMS believes that selection of the 80th percentile will be "budget neutral" for the overall Workers' Compensation system and, together with the global billing adjustment discussed below, will result in a reasonable base for application of the Consumer Price Index cap limiting future increases.

(2) One Time Adjustment in Surgical Fees For Global Billing.

CSMS strongly maintains that implementation of a Practitioner Fee Schedule for surgical procedures that *ignores* the fact that many physicians continue to bill for the surgical procedure itself and for the pre-op and post-op visits in addition would have a dramatic negative and unfair effect on all physicians who provide surgical procedures. Thus, CSMS maintains that implementation of the Practitioner Fee Schedule must be accompanied by a one-time adjustment to accommodate for the fact that historically, Connecticut physicians have billed separately for post-operative visits, except those occurring within two weeks following surgery, and that therefore historical charge data for global billing is inadequate. Failure to make such an adjustment (for surgical fees only) would penalize physicians for their participation in establishing a new global payment system for Workers' Compensation which no longer pays for office visits following surgery.

Nationally, more physicians have moved to global billing in recent years (i.e. including charges for pre-op and post-op visits in one single charge for the surgical package).

However, information reviewed by the Medical Fee Advisory Group presented by reviewers, by payors and by CSMS demonstrated that there presently is no clear pattern among Connecticut physicians regarding global billing. Furthermore, the CSMS technical consultants ascertained from MDR that whether surgery is billed globally or separately is not accounted for in MDR data. Thus when the MDR data base is used to establish a global billing system fee schedule, an adjustment in the surgical fees is needed to offset the fact that pre-op and post-op visits will no longer be covered. For these reasons, the onetime adjustment is requisite to ensure the fairness of the new payment system.

CSMS proposes that this adjustment be effected through a one-time upward adjustment in the conversion factors used to establish the initial Practitioner Fee Schedule to account for the adoption, pursuant to these regulations, of a global billing system for Practitioner fees. Under similar circumstances Medicare made such a one-time adjustment when it implemented payments based on a Global surgical package standard in 1992.

The Medical Fee Advisory Group reviewed the "Post-operative Percentages" determined by and used by Medicare in making these 1992 adjustments. Medicare used an arithmetic mean rather than a weighted average approach in its calculations, and the arithmetic mean of all surgical specialties designated by Medicare was 13.7%. In its meeting of 1 March 1993, the members present at the Medical Fee Advisory Group meeting noted that three surgical specialties predominated for Workers' Compensation, with post-op percentages as follows:

Integumentary (skin)—predominant	19%
Musculoskeletal	21%
Nervous	13%
Arithmetic Mean of the three:	17.67%

As a compromise, CSMS would be willing to agree to a working assumption that one half the physicians in the state billed separately for surgery and pre- / post-op visits, and one half billed globally. Based on this, and using the Medicare methodology of based on arithmetic means, a one-time adjustment is determined as follows:

a. Arithmetic Mean of 3 specialties:	17.67%
b. Arithmetic Mean of all Surgical specialties	13.7%
c. Average of the two:	15.69%
d. Rounded arithmetic mean of the two:	16%
e. **Adjustment Amount**	**8%**

Thus, based on the working assumption that one half the physicians in the state billed separately for surgery and pre- / post-op visits, and one half billed globally, one-half the rounded arithmetic mean in (d) above should be taken, giving an adjustment of 8%.

Thus, CSMS maintains that a one-time, permanent upward adjustment to the surgical conversion factor of 8% should be made. Only by making such an adjustment is the fact that many physicians have continued to bill for the surgical procedure itself and for the pre-op and post-op visits in addition fairly acknowledged, thus keeping the payment amounts at a fair level.

(3) Establishing A Mechanism For Resolving Prior Claims.

Although not part of these proposed regulations, CSMS supports the proposed Resolution and Order addressing "Prior Claims" that was proposed by the Advisory Group. Adoption of a fair and expeditious mechanism for resolving prior claims is essential as part of addressing the overall system-wide problems. With the knowledge that the Workers' Compensation Commission, together with the Advisory Group, has been working on a system-wide resolution, many physicians have withheld complaints and appeals of numerous claims that have been reduced or denied since the third-party reviewers commenced their activities in 1990. The critical need for a fair and equitable percentile level discussed above will also be essential in resolving prior claims, since the acceptability of the proposed Disputed Prior Claims Resolution and Order is contingent upon selection by Chairman Frankl of a reasonable percentile. For the reasons discussed above, CSMS believes, based on advice from its technical consultants, that the 80th percentile of MDR data must be the basis for the prior claims fee schedule.

Conclusion

CSMS supports the proposed Practitioner Fee Schedule regulations, subject to acceptance of the concerns discussed in these comments. CSMS will provide a panel

Testimony of Marvin Arons, M.D.
To The Workers' Compensation Commission
Regarding Proposed Regulations for Practitioner Fee Schedules
September 23, 1993

MAY I introduce myself as Marvin S. Arons, M.D., Chairman of the State-Wide Task Force on Workers' Compensation for the Connecticut State Medical Society and Clinical Professor Plastic Surgery at Yale and Chief of the Section of Plastic Surgery of The Hospital of St. Raphael specializing in hand surgery. In 1990, what began as a $70 bill of mine being reduced to $43.50 by a new insurance review company employed by a workers' compensation insurance company in Connecticut launched me from my office at St. Raphael's Hospital into initiating a unified response from the Connecticut State Medical Society. It was my opinion that these review companies for workers' compensation fees were absolutely usurping the sole and legal duty of the workers' compensation commission, and that these review companies such as Accumed, Medcheck and Focus, were never given legal authority by the workers' compensation commission or its chairman for this type of unilateral review and fee reduction, sometimes considered both arbitrary and capricious. So, from a solo surgeon's Informal Hearing with Commissioner George Waldron in New Haven several years ago, the CSMS formed a state-wide task force on the subject. CSMS approached Commissioner Arcudi who then appointed the Connecticut Workers' Compensation Medical Fee Advisory Group comprised of representatives of organized medicine, business and industry, and the insurance companies to codify and to unify the rules and regulations as they apply to medical providers in Connecticut. What commenced as a goal of investigation and restitution has ended up as a cooperative effort by the Connecticut State Medical Society to help reform or improve the workers' compensation system in Connecticut.

What must be realized here today is that a physician provider not only holds the pivotal role in the workers' compensation system, but rendering workers' compensation care, whether it be emergency surgery or consultation, requires much more administrative skill and office management than routine non-workers' compensation related patient care. Special reports must be filed. Multiple questions must be answered. Multiple letters to various people involved in a case must be typed and sent. Copies go to the attorneys. Copies go to the employer. Copies go to the lawyer representing the insurance company. Copies go to the industrial nurse or physician. Copies go to the labor unions. Copies go to the shop stewards. All of these people call the physician. All want answers. This additional administrative work is an added responsibility and burden taken on by the workers' compensation provider. I did not even include phone calls, faxes, review of medical records that accompany these patients, especially all those circulating in Connecticut for consultation. This inordinate time input and cost input by the physician provider must be factored into the reimbursement equation.

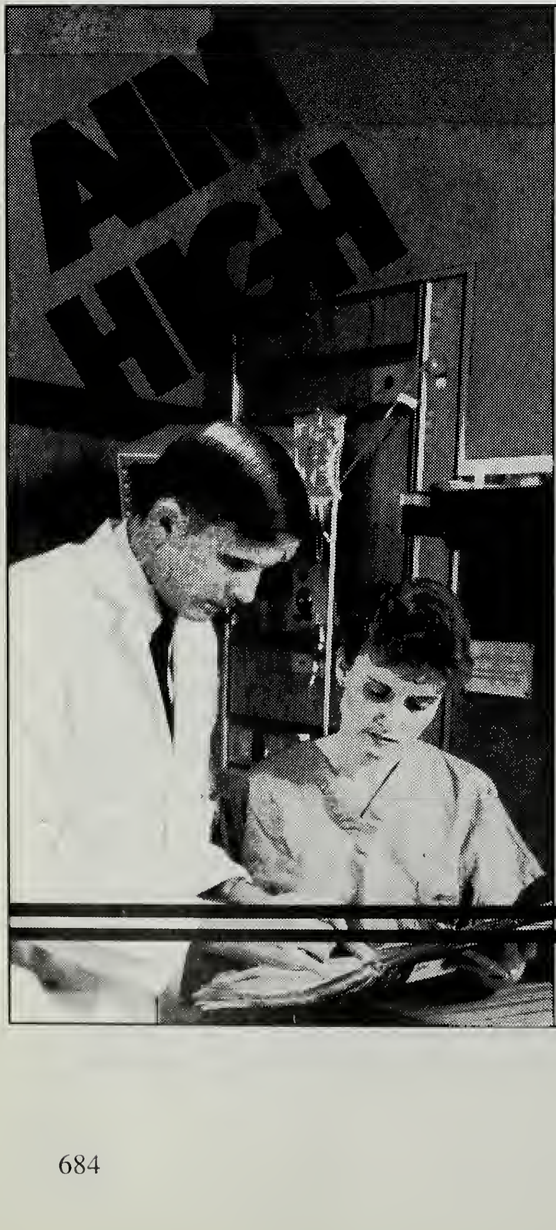
Additionally, we must address the problem retrospectively of all the prior claims by physicians in Connecticut against the workers' compensation insurance companies who have used these review agencies to unilaterally change codes of operations for payments and by so doing reduce fees based solely on their personal discretion. They have used fee percentiles of their own choosing so that one insurance company may tell a review agency, "you use 60%" and another insurance company says "70%" and another insurance company says "90%". Again, only the workers' compensation commission can determine fees in Connecticut, and only the workers' compensation commission can determine percentiles. No one else has that authority. No one else ever did have that authority. We recognize that if these prior claims were to be individually settled, the entire workers' compensation system in Connecticut would be so overwhelmed as to be rendered inoperative since each claim would require an Informal Hearing and then perhaps a Formal Hearing, and one can imagine what would be involved in perhaps a quarter of a million claims having to be individually settled by workers' compensation commissioners. If these prior claims are not to be individually settled, then we need to codify a system of rebilling and reprocessing under agreed upon standards of usual, customary, reasonable and prevailing fees. The Connecticut State Medical Society is very aware of the federal anti-trust regulations which are a great constraint upon us in dealing with the prior claims issue, so that we look to these new rules and regulations to be promulgated by the workers' compensation commission as a method of achieving retrospective fairness as well as of uniformity.

We must also address the concept of global billing. In workers' compensation cases, in any other type of case, with any other patient other than a Medicare patient, each physician in Connecticut has a right to make usual, reasonable and customary charges, and this can be reflected in either global billing or it can be reflected in individual charges for a consult, for the surgery and the postoperative visits. Because there is currently no single standard for surgical billing, global billing versus single billing must be reconciled with this new fee schedule regulations and with the retroactive outstanding claims.

One final item to be mentioned, and then in passing only, is that of utilization review. Although this was never a goal or an item of business for the workers' compensation medical fee advisory group originally arranged by Commissioner Arcudi and then approved by Chairman Frankel, the Connecticut State Medical Society views the issues of utilization review and practice protocols to be of utmost importance and we urge that they be addressed.

We pledge our support and assistance to the Chairman on these matters.

Editor's Note: The Connecticut State Medical Society would like to thank Marvin Arons, M.D. for his extraordinary efforts in both chairing the State-wide Task Force on Workers' Compensation and representing the CSMS on the Commissioners Medical Fee Advisory Group.



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AIR FORCE

Kath

H.J.C. SWAN, M.D., PH.D.

> Will you not allow that I have as much of the spirit of prophecy in me as the swans? For they, when they perceive that they must die, having sung all their life long, do then sing more lustily than ever, rejoicing in the thought that they are going to the god whose ministers they are.
>
> Plato
> *Phaedo*

NINETEEN ninety-two has been a strange year for funerals. Not a heart death among them. Six in all. All solid tumor. Two lungs. Two breasts. A colon. And a cervix. Three men, three women—mean age, 55; range, 34 to 70. Two other physicians, a physician's wife, my accountant of 27 years, a much-loved brother-in-law. And Kath. Katherine Swan Ginsburg, 34, MD, M.P.H.. Department of Rheumatology, Brigham and Women's Hospital, Instructor in Medicine, Harvard Medical School, first author of an article[1] in this issue of *Annals;* and my youngest daughter.

Kath had been away from home for 16 years—UCSD, Tulane Medical School, and since 1985 in Boston. Internal medicine resident at the Beth Israel Hospital, fellow in rheumatology at Brigham and Women's. Only when she was dying and after her death did I really have any understanding that she was a mature and truly gifted physician, and could then comprehend not only the tragedy of her passing but the broader loss of a superb role model for young physicians. As a father, I was proud of her coming into our profession, but to me she was still my girl. When I would come to Boston she would get ready to do "The Daddy Thing" she told her friends. Exactly what the Daddy Thing was, none of them knew, but it must have been her way to preserve our father-daughter relationship.

There were 300 or more at the funeral at the Presbyterian Church in Newton, Mass.—enough for a politician or a full professor or even a dean. Patients, nurses, staff, coworkers, members of her church and of her cancer support group, and especially her BI housestaff counterparts—that new generation of physicians that has restored my optimism for our profession. And only then did I understand the maturity she had gained, the respect with which she was regarded, and the sheer love that she had inspired. A BI nurse: "She was a scared intern when I first met her in 1985, but she became a mature and confident doctor quicker than most, and far more compassionate." A rheumatology fellow: "If I wanted to discuss anything, I waited for Kath, even when she was sick, because I would get her complete attention. She'd wait a day or so and then we'd work it out together." A dying Massachusetts General patient with AIDS: "What has happened to Dr. Kathy Swan? She gave me so much time at the BI when I first got sick." Her clinical chief: "We knew that her interaction with patients was characterized by compassion and her respect for their dignity. These qualities have established a standard for all of us to emulate." Dr. H. Richard Nesson, President of the Brigham and Women's Hospital, wrote: "Kathy was recognized as a gifted physician with superb clinical skills and extraordinary compassion for her patients. Her ability to maintain an active clinical practice despite her three-year battle with cancer was remarkable. The fact that she never let it interfere with her ability to provide care spoke volumes about the kind of person she was.…I hope that the establishment of the Katherine Swan Ginsburg Visiting Professorship in Rheumatology will serve as a reminder to us all of an extraordinary physician and a lovely woman."

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Requests for Reprints: H.J.C. Swan, M.D., Ph.D., 1075 Wallace Ridge, Beverly Hills, CA 90210

Kath loved the Beth Israel Hospital. For the first month there were the four times weekly consult calls to the west coast. Then she could sail on her own. "Dad, the only services I didn't like were AIDS and Heme-Onc. So many young patients, and we could do nothing for them." A prophetic statement if there ever was one. Her marriage to Geoffery S. Ginsburg, now a cardiologist at the BI, on 1 October 1988 was the high point of her life. Her next door neighbor: "After work, they would sit together on the deck with a glass of wine, or iced tea, like newly-weds." Home life was mostly jeans and oversized sweaters. But when the occasion called she was front-cover *Vogue*. A goodly proportion of her BI housestaff were women, and several, as did Kath, married or were married to their contemporaries. This unique group—combining a full professional career with an equally important family life—bonded together in a spirit of total commitment to one another. This support, together with her Christian faith, sustained Kath and Geoff through the horror that they endured for two years and five months of their marriage of less than four years. Fifteen hospital admissions, three laparotomies, two radiation series, three chemotherapy sequences, stem cell transplant, mega chemo, short bowel syndrome, a Hickman and a right nephrostomy catheter for her last six months, and countless outpatient visits for radiation, chemo, and labs. And a positive liver biopsy as a thirty-fourth birthday present on August 3rd. Yet no complaints, except, in her last elective admission, to gently counsel a new intern because of his audible and inconsiderate comments on her condition. And, between times, back to her normal life, her training—taking boards in rheumatology during chemoradiation, authoring the report in this issue of *Annals* before and during stem cell collection, doctor to her patients in the real meaning of that title, and remodeling her home, with the last piece of her new furniture delivered six hours after her death.

And what for me—the Daddy; 20 April 1990: "Dad, I don't want to disturb you—it'll be just fine. But I have cancer. My world stopped. At 31, it must be class 1. There are so many advances. So much more is known.

The old mortality tables don't count. Not for Kath. So went all of my denials. Her first laparotomy in May confirmed our greatest dread—a single para-aortic node. But chemotherapy was not so different from a decade ago. Radiation therapy did not seem to be effective against the aggressive malignancies. Solid tumor cancer deaths seem to be increasing rapidly, despite all claims of success from "the authorities." In July, the crab took off with incredible fury and was totally unstoppable. Shortness of breath, fatigue, loss of appetite, and intolerable back pain. A CT scan positive for pelvic, para-aortic, hepatic, mediastinal, and pulmonary metastases. And the anger. A Pap smear in 1982: "The cells are seen to infiltrate the adjacent surfaces"...in a 24-year-old! She had called from New Orleans: "Everything is okay, Dad, the doctor says I have nothing to worry about."

I returned from Spain on September 3rd, as events accelerated. Turquoise eyes sunken in their orbits. Arm—a stick covered by skin. Pronounced lower limb edema. Severe orthopnea on continuous oxygen consumed all of her energy in the work of breathing. Morphine limited her awareness yet the persona was there "Hi, Dad, how was your trip? You must be tired." A coughing spell, aspiration pneumonitis, the emergency ambulance to BI, admit to the MICU, chest bilateral white-out. Her friends, coworkers, and the nurses joined in our grief at her bedside. And so, on the morning of the fifth day of September 1992 with Geoff, my wife Roma, and son Jeremy, I watched Kath Swan Ginsburg die, complete with radial line, pulmonary artery catheter, blood gases, and so forth. Knowing the outcome, she spoke her last words before intubation: "Tell them that I'm not afraid"—a final expression of concern and comfort for her husband and family before self.

"Dad, how do I learn to swim with sharks?" asked Kath when offered a staff position at the Brigham in the fall of 1991. She answered her own question: "It's a clinical position, and I'm always comfortable with patients, so I'll just do my best and smile." And the sharks mellowed and loved her. The leadership of the BI and of the Brigham—the institutions that had nurtured her maturing into the person she became—did their part in sharing the economic burden of her illness—she was one of their own, she was family. Her admired coworker and my own dear friend, the respected epidemiologist Dr. Charles Hennekens, wrote to Kath on 1 September 1992, to tell her that her paper had been accepted by *Annals.* He continued: "Your perceptions, sensitivities, dignity and grace continue to inspire us. Contrary to outside opinion, we who have had the pleasure and privilege to know you, also know that Jeremy Swan's greatest contribution to this world was not the catheter but the Katherine." Right on, Charlie.

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DRUG INFORMATION UPDATE: HARTFORD HOSPITAL

Sedation in the Adult Intensive Care Unit

JILL FITZGERALD, PHARM.D.

THE treatment of agitation in the modern intensive care unit (ICU) has become a complex medical problem with costs approaching one million dollars per year at Hartford Hospital. The complexity of medical management stems from the multifactorial etiology of agitation and the lack of standard objective scales to evaluate the agitated patient. In addition, many patients who are acutely agitated have multiple medical problems, may have some known or unknown alcohol or drug abuse, and may be intubated.

Agitation may be the result of pain, fear, anxiety, depression, or delirium. Knowing the cause can aid in its treatment. Unfortunately, for the reasons listed above, the cause is not always known or cannot be illicited from the patient. This is where the "art" of sedation comes into play.

The treatment of agitation becomes an issue of patient safety, comfort, and the safety of other health-care providers. The goals of sedation for a particular patient should be clearly defined, tailored, and discussed among the caretakers just as with any other medical problem. The goals can range from an awake, alert, cooperative patient to one who needs to be completely obtunded and perhaps even paralyzed in order to be synchronized with the ventilator. Drug therapy should be selected based on appropriateness and cost effectiveness.

There are both nonpharmacologic and pharmacologic methods to provide comfort for the ICU patient. The ICU environment is one of high technology with continuous noise, people, and lighting such that patients lose their sense of night and day. Sleep cycles are disrupted by monitor noises, medication administration, and personal care. As health-care givers, we need to be more mindful of a patient's privacy, and we need to explain procedures and premedicate for painful procedures. Attempts to make continuous assessment of pain through verbal and nonverbal communication can increase patient comfort. In addition, useful family support should be encouraged and dysfunctional family encounters that upset or agitate the patient should be avoided. Nurses play an integral role in patient advocacy and comfort.

Pharmacologic treatment of agitation includes the use of narcotics, benzodiazepines, and the phenothiazines/butyrophenones. Each may be used alone or in combination to control the patient. Occasionally, patients may also require a paralytic because their respiratory status is such that any movement can compromise their oxygenation.

Narcotics

Narcotics are indicated when agitation results from pain. There should be a high level of suspicion that pain may be part of the cause in an agitated ICU patient. Nearly all patients have some type of invasive procedure performed ranging from central line insertion to intubation. In addition, pain may be the result of trauma, surgery, or an underlying medical condition. Narcotics may be prescribed on an as-needed basis but the dosing interval should not exceed two hours. In some situations the use of regional anesthesia with epidural narcotics or anesthetics may be appropriate to relieve isolated pain. Again, comfort for the patient should be the primary goal. A continuous infusion of narcotic should be considered for those patients requiring large amounts or frequent doses of medication, on an "as needed" basis.

Morphine is the drug of choice for most patients. The dose may range between 1-20 mg IV every two hours as needed for pain. Elderly patients and those with signifi-

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cant liver disease may require small doses, whereas patients with a history of drug abuse or very young patients generally require higher doses.

Morphine should be avoided in patients with renal failure because of the accumulation of an active metabolite (morphine-6-glucuronide) which is a more potent analgesic and respiratory depressant and has a longer half-life than the parent compound.[1-2]

Morphine may also cause significant histamine release and hypotension.[3] If this becomes a clinically significant adverse effect, fentanyl or buprenorphine may be substituted.

Hydromorphone (Dilaudid®) is generally the drug of choice for patients with significant renal insufficiency or renal failure. It has no active metabolites and the parent drug does not accumulate in this disease state.[4] Patients may be switched from morphine to hydromorphone, using a 5:1 conversion: 10 mg IV morphine equals 2 mg IV hydromorphone. The usual dosage range is 0.25 mg-2 mg IV every two hours as needed for pain.

Buprenorphine (Buprenex®) is a partial agonist indicated for patients in whom morphine has caused significant histamine release and hypotension. Buprenorphine is also safe for patients with renal failure as it has no active metabolites.[5] Also, this agent has less effect on smooth muscle and has been used successfully in patients with an ileus.[6] The usual dose of buprenorphine is 0.075-0.6 mg IV every two hours as needed for pain.

Because buprenorphine is a partial agonist, it should be used with caution in a patient with a history of intravenous drugs abuse or a patient who has been chronically maintained on narcotics. In addition, buprenorphine has a ceiling effect to its analgesia and respiratory depression. Increasing single doses beyond 0.6 mg is probably not more effective.[7]

Any of the narcotics can be administered by continuous IV infusion for more consistant pain control.

Benzodiazepines

Benzodiazepines are the drug of choice for patients who exhibit anxiety, who require an amnestic agent (patients on neuromuscular blockers), or who are going through alcohol withdrawal. In addition, this class of agents provides muscle relaxation and seizure suppression. However, in a minority of patients, benzodiazepines can cause increased excitation and confusion. These patients include those with an organic brain syndrome or elderly, depressed patients. In addition, because of their amnestic property, they may make patients less cooperative and more confused because they are not oriented to place or time. There is a pharmacodynamic interaction between theophylline and the benzodiazepines, such that theophylline may antagonize the central nervous system depressant effects of the benzodiazepines.[8,9] Therefore, patients who are taking theophylline may require higher doses of benzodiazepines to sedate them. Addition of another sedative may be required.

Diazepam (Valium®) is rarely used in the ICU for sedation because of the long half-life of the parent compound and its pharmacologically active metabolites. It can be useful, however, for the patient in alcohol withdrawal, as large amounts of benzodiazepines may be required. The dose range is 2.5-10 mg IV every two to four hours as needed for agitation.

Lorazepam (Ativan®) is generally the benzodiazepine of choice in the ICU. It has an intermediate duration of action and is metabolized to pharmacologically inactive metabolites. The usual dose range is 0.5-4mg IV every two to four hours as needed for agitation. Around-the-clock dosing is preferable for the severely agitated patient. Generally, in the absence of ethanol withdrawal, maximum doses of 4mg IV every four fours will be sufficient for most patients. If agitation is still a problem, addition of a phenothiazine or butyrophenone will usually calm the patient.

Midazolam (Versed®) is the shortest-acting benzodiazepine available. Its metabolites are only weakly pharmacologically active. Midazolam generally has a more rapid onset of action, and therefore can be useful for quick control of patients who may injure themselves or their caretakers. Midazolam is also useful for sedation during short-term procedures. The dose range is generally 1-5mg IV every hour as needed. Because of its short duration of action around-the-clock intermittent dosing is not successful, however, continuous infusion midazolam has been used. Because of its high cost, infusions should not exceed 10 mg/h and the duration of the infusion should be limited to three to five days. Patients can be successfully converted over to around-the-clock doses of lorazepam. Continuous infusions are generally started at 1-5 mg/h. If an increase in the infusion is clinically necessary, a bolus dose of 2-5 mg IV should be given prior to the increase to reach a therapeutic effect quickly.

Benzodiazepine infusions and around-the-clock lorazepam should be tapered over several days to prevent withdrawal reactions.

Flumazenil (Romazicon®) is a benzodiazepine antagonist that has become available within the last year. It is FDA-approved for benzodiazepine overdose and reversal of benzodiazepine anesthesia. Flumazenil has an onset of action within one to two minutes with a half-life of 0.7-1.4

Table 1.—Sedative Agents for ICU "Agitation"

	Dose	Comments	Daily Cost of Drug
Narcotics:			
Morphine	1-20 mg IV q2h p.r.n pain Infustion: 1-20 mg/h	Avoid in patients with renal failure, monitor for hypotension	Intermittant dosing ID: $4.44-$6.96 Continuous Infustion CI: $3.79-7.58
Hydromorphone	0.25-2 mg IV q2h p.r.n. pain Infusion: 0.25-2 mg/h	Narcotic of choice for patients with renal insufficiency or failure	ID: $7.92 CI: $10.26-$82.08
Buprenophine	0.75-0.6 mg IV q2h p.r.n. pain Infusion: 0.75-0.6 mg/h	Use with caution in IVDA or in patients chronically maintained on narcotics—may precipitate withdrawal reaction. Good for patients ileus or renal failure	ID: $20.52 CI: $10.26-$82.08
Benzodiazepines:			
Diazepam	2.5-10 mg IV q2-4h p.r.n. agitation	Very long half-life with pharmacologically active metabolites	$4.08
Lorazepam	0.5-4 mg IV q2-4h p.r.n. agitation	Intermediate duration of action, inactive metabolites	$63.12-$115.32
Midazolam	1-5 mg IV q1h p.r.n. agitation Infusion: 1-10 mg/h	Short duration of action, weakly active metabolites, high cost by Continuous infusion	ID: $39.96-$175.68 CI: $59.97-$299.85
Antipsychotics:			
Haloperidol	5-40 mg IV q4-6h	Minimal effect on BP; monitor for prolonged QT interval	$5.05-$25.25
Cholorpromazine	25-250 mg p.o. or n.g. tube q6h	Good sedating drug; IV can cause significant hypotension. Monitor for prolonged QT interval	$6.75-$27.00

1.4 hours. Its duration of action is reported to be one to four hours. Because of its short half-life, multiple doses or continuous infusions may be needed for patients in whom resedation occurs with the longer-acting benzodiazepines. Use caution when administering flumazenil in a patient who has been on long-term benzodiazepines as a withdrawal syndrome can result. The dose of flumazenil is generally titrated in increments of 0.2 mg every 30-60 seconds until a response is noted.

Antipsychotics

This class of medications is useful for the patient who exhibits psychotic behavior or delirium. These patients are often the ones who can not be reoriented to place by nonpharmacologic methods. They exhibit thrashing, nonpurposeful movements. Their agitation may be worsened by benzodiazepines as their ability to reorient themselves is worsened by an amnestic agent. The two drugs commonly used in this class are haloperidol (Haldol®) and chlorpromazine (Thorazine®).

Haloperidol (Haldol®) is useful for the ICU patient as it has minimal effect on blood pressure. By the IV route, the extrapyramidal reactions are rare. It tends to calm and reorient the patient without causing excessive sedation.[10] Hartford Hospital has a protocol for administering IV haloperidol which recommends a starting dose of 5-10 mg IV and a doubling of the dose every 20 minutes up to a maximum of 40 mg. The dose that calms the patient is the one that is continued on an every four to six hour schedule. Midazolam may be used in the titration procedure if the patient is sufficiently agitated that he is a threat to himself or his caregivers. A PRN order for haloperidol should be ordered for breakthrough agitation. The dose of haloperidol should be mixed in 50 mL of 5% glucose solution and administered over five minutes to decrease the incidence of hypotension.

Chlorpromazine (Thorazine®) has the advantage of causing more sedation than haloperidol. Administration by the oral or nasogastric route is preferable, as IV chlorpromazine can cause significant hypotension. We have found this to be an effective adjunct to the benzodiazepines in patients experiencing alcohol withdrawal. Starting doses of chlorpromazine are 25-50 mg every six hours. The maximum dose is generally 250mg every six hours. A PRN order for either haloperidol or chlorpromazine is effective for breakthrough agitation. Both haloperidol and chlorpromazine are dopamine antagonists and therefore should not be used in patients with a history of Parkinson's disease.

Additionally, both these agents can widen the QT interval and should be used with caution or avoided in the presence of other drugs that can widen the QT interval (ie. quinidine, tricyclic antidepressant overdoses). The dosage, relative comments, and cost of these sedative agents used for ICU agitation are summarized in Table 1.

Conclusions

The treatment of agitation in our ICUs is a complex and difficult matter. Often, goals are not established and communication among the healthcare givers is not optimal. The appropriateness of nursing care as a non–pharmacologic approach as well as medical therapies to reverse their confusion should be utilized. Discussions and plans regarding sedation should be addressed on a daily basis with clear goals and plans established regarding increasing or decreasing medication doses. Once a patient is controlled, a daily assessment of drug dosage should be made to attempt to use the lowest effective dose. This will avoid oversedating patients and subjecting them to long-term weaning once it is decided that the patient needs to be extubated.

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50 Years Ago

From *The Connecticut State Medical Journal*

October 1943

The Management of Neurological Syphilis in a General Hospital by Malaria Inoculation

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FIFTEEN patients with the various types of central nervous system syphilis have received fever treatment with malaria inoculation at the Meriden Hospital. Four were private patients, the remainder were admitted to the ward medical service. The incubative period after artificial inoculation with quartan malaria intramuscularly is about thirty days. When used intravenously the incubative period is from four to twelve days. The incubative period with intravenous malaria of a tertian strain is about three to eight days. Not uncommonly with either type or either method it is necessary to stimulate the "malarial take" with shock therapy such as typhoid vaccine intravenously and when this fails, to attempt again, inoculation with malaria. Hospitals are overcrowded. Beds are needed for acute emergencies. It is expensive for the patient to spend this time in the hospital and quite unnecessary. Therefore, the following procedure was used. The patients were inoculated at their own physician's offices or at the out patient syphilis clinic. The malarial blood was obtained from the Connecticut State Hospital at Middletown. The blood was injected on the day that it was collected. All of the patients were then permitted to go home and about their usual routine and to report to their physicians or the hospital with the onset of chill or fever. In this way many unnecessary hospital days were saved both for the patient and hospital.

Prior to admission to the hospital all patients had been worked up with complete physical, neurological, mental, and laboratory examinations. The latter consisted of blood and spinal fluid Wassermans, cell count, globulin, and colloidal gold curves. During the febrile course, blood non protein nitrogens were estimated once or twice a week. Complete blood counts were done twice a week. Blood smears were examined frequently for malarial parasites. These were positive in all cases.

Age.—The fifteen patients ranged from 13 to 63 years of age at the time of the inoculation. The average age was 42+ years.

Sex Distribution.—There were ten males and five females.

Duration of Syphilis.—Before inoculation this varied from a few months to 35 years; the average length of time before treatment was approximately 15 years.

Previous Treatment.—All but three of the patients had received some kind of antiluetic treatment before the institution of fever therapy. Of these three, one had tabes dorsalis, one had congenital lues and juvenile paresis, and one had the mixed type, paresis, and meningovascular syphilis. The others had received varying amounts of neoarsphenamine, mercury, bismuth, and potassium iodide. One patient had received tryparsamide.

Onset of C.N.S. Syphilis.—The onset of the central nervous system syphilis according to the history varied from a "few weeks" to eight years before fever therapy

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From the *Connecticut State Medical Journal*, June 1943.

was instituted. The complaints of the patients were variable: ptosis of an eyelid, pains in the legs, loss of deep sensation in the legs and feet, gastric crises, hemiplegia, diplopia, staggering gait, "nervousness," "limp in the leg," difficulty in passing urine.

Types of Central Nervous System Syphilis

Tabo-paresis	5	Meningo-vascular	1
Tabes	5	+ paresis	1
Paresis	2	Juvenile paresis	1
		Asymptomatic	1

At the onset the diagnosis of syphilitic involvement was established in 12 instances by clinical and laboratory data, in two instances by laboratory examination, and in one case by clinical means (tabes dorsalis).

Physical Examination.—Pupillary changes were found to be the most prominent and consistent abnormal finding. These varied from slight inequalities to the typical Argyll-Robinson type. Of the fifteen patients, thirteen showed some degree of pupillary change. One patient showed optic atrophy. The two patients who failed to show pupillary changes were tabetics.

Of the ten cases of tabes and tabo-paresis there were eight with loss of knee jerks or ankle jerks or both. Four of the five with tabo-paresis had tremors of the tongue or hands or both.

Hemiplegia of sudden onset was a presenting sign in the mixed type. In this case the colloidal gold curve was of the paretic type.

Seven of the fifteen cases presented mental changes. These varied from "nervousness" to marked deterioration. These changes were present in the paretics, tabo-paretics, and in the case of juvenile paresis. There were the usual disturbances of memory, confusion of ideas, euphoria, impairment of judgment, emotional changes, lack of insight, and impairment of calculation. One of the tabetics was "nervous" but complained of no other symptoms.

Blood Serology.—At the time of inoculation with the malaria the blood serology was positive in nine of the fifteen cases or 60%.

3 positive in 5 tabo-paretics
3 positive in 5 tabetics
2 positive in 2 paretics
1 positive in 1 juvenile paretic
negative in 1 mixed type
negative in 1 asymptomatic

Spinal Fluid Examinations.—In all cases but one there was evidence of spinal fluid changes either in the Wassermann reaction, cell count, globulin or colloidal gold curve. The spinal fluids were examined at least once prior to the malaria treatment, twice in two cases, and three times in three cases.

The five cases of tabo-paresis presented the following data: 1. Five positive Wassermanns; 2. Absence of cells in 3 cases, 123 lymphocytes in one case, and no record in one; 3. Two positive globulin reactions, two negative reactions and no record in one; 4. One tabetic colloidal gold curve.

The five cases of tabes presented the following data: 1. Four showed positive Wassermanns; 2. Absence of cells in three cases, 120 lymphocytes in one and 22 lymphocytes in another; 3. The globulin was positive in three cases and negative in two; 4 -One positive colloidal gold curve.

The two paretics had positive spinal fluid Wassermanns. One had a tabetic colloidal gold curve while the other had a typical paretic curve. In one there were twelve lymphocytes and a 4 + globulin. No record of cells or globulin could be found in the second.

The "mixed type" case showed a positive Wassermann, absence of cells, 1 + globulin and paretic colloidal gold curve. The juvenile paretic presented a positive Wassermann, absence of cells, 1 + positive globulin, and negative colloidal gold curve.

The asymptomatic case had but a positive Wassermann in all quantitative dilutions (0.2, 0.1, 0.05).

The tabo-paretics showed the following data in the spinal fluids after treatment:

(1) Reversal of the positive Wassermann in three of the four cases.

(2) Reversal of cells in one, from 123 to zero.

(3) Reversal of tabetic colloidal gold curve to zero reaction.

(4) No record in one case.

(5) Reversal of the globulin reaction in one case.

The spinal fluids demonstrated the following facts, among the five tabetics:

(1) Reversal of Wassermann in one.

(2) Reversal of cells in one, from 120 to zero.

(3) Reversal of tabetic colloidal gold curve to zero.

(4) No change in one case.

(5) No record in two cases.

The management of the paretics was the most unsatisfactory. One patient refused to return to the hospital for spinal puncture. In the second case fever treatment had to be interrupted because of delirium, incontinence, and extreme weakness.

The "mixed type" case has maintained a positive Wassermann in the spinal fluid, but the globulin reaction has changed from one plus to zero, and the paretic gold curve has reversed to normal (0012210000).

The asymptomatic patient showed reversal of spinal fluid Wassermann.

The juvenile paretic demonstrated reversal of the Wassermann and globulin in the spinal fluid.

In the first two cases, the tertian variety of malarial parasite had been used and given intravenously; the incubation period was on the sixth day in the first case, the third day in the second case. All the other patients had been inoculated with the quartan type, three of them intravenously and the last ten intramuscularly. The incubation period in the last group varied from 25 to 44 days.

There were several factors in the patients' condition that were closely watched during the period of chills and fever.

(1) Development of secondary (hypochromic) anemia.

(2) Increase in non protein nitrogen.

(3) Enlargement of the spleen.

None of the patients had erythrocyte counts that fell below 3.0 million per cubic mm. Five of the patients developed palpable spleens, but none of them became tremendously enlarged. Four patients demonstrated increase of the NPN to levels above normal, namely 48, 50, 100, 55. At no time were there any symptoms suggesting a plasmodial meningitis. Two patients developed phlebitis during the febrile course. No jaundice appeared during the fever bouts, nor did erythrocytes appear in urine. No quinine or atabrine resistant cases were found. Plasmodia disappeared after the institution of quinine or atabrine and remained so. No granulocytopenia occurred during quinine therapy.

Kopp and Solomon[1] have reported edema occurring during malarial fever. They have associated this with low serum albumin. They felt that the edema occurring during the course of therapeutic malaria in patients free from renal damage or cardiac failure is probably aggravated by an increase in sodium chloride intake. Judd,[2] however, feels that these patients should be given sodium chloride rather liberally because of the loss of sodium chloride associated with elevation of temperature and sweating. Edema did not develop in any of our patients. They were given house diets, either regular or soft, without increase or restriction of salt.

In the early days of malaria therapy the amount of treatment was measured by the number of chills. This was soon recognized to be inaccurate because of the variation in severity of the chills and the height and duration of fever. It is better to figure the intensity of therapy by the number of hours of fever above a certain mark which we selected as 103° F. The average number of hours experienced was 71 +.

The average number of days in the hospital was 41. This is of economic importance in planning the course of fever therapy for neurological syphilis.

Of the 15 patients, two have died of causes independent of the central nervous syphilis: a paretic, of cerebral hemorrhage, and a tabo-paretic of coronary closure. Ten are known to be alive, and the whereabouts of three are unknown, namely one paretic, one tabetic, and one asymptomatic.

There are four tabo-paretics living. Of these one has complained of occasional lightning leg pains, ever since the fever therapy seven years ago. The condition of two are unchanged; whereas the fourth shows improvement in dysarthria, tremor, and lightning pains.

The four tabetics are doing well. One feels subjectively better; he sleeps better and the lightning pains in his legs have disappeared. He no longer complains of nervousness. His pupils, previously fixed, now react to light. This patient now has a B.P. of 190/85 and a systolic aortic murmur, thus raising the possibility of aortic insufficiency. Another is likewise feeling better. One year ago he had an attack of chest pain probably of a radicular type which lasted for a short time and has not recurred. Two others are symptom free.

The mixed type is slightly better. His pupils react better to light than five years ago. The tremor of hands has disappeared, but the tremor of tongue is still present. The Wassermann of the spinal fluid is positive, but the colloidal gold has remained negative.

The juvenile paretic is unchanged clinically. However, his spinal fluid has become serologically negative only in the past few months, two years after the therapeutic malaria. This reversal is unusual in congenital syphilis with paresis, but is consistent with the delay of serological change that occurs among other kinds of neurosyphilis.[3,4]

Summary

The blood Wassermann was positive in nine of the cases.

The spinal fluid Wassermann was positive in fourteen of the cases. There was an increase in the cell count in four cases. The globulin was positive in eight cases. The colloidal gold curve was positive in five cases.

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Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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After treatment the Wassermann was reversed in five cases and in another a reversal occurred two years later. The cell count returned to normal in two cases. The globulin was reversed or reduced in intensity in two cases. The colloidal gold curve was reversed in three cases. Six of the fifteen cases have shown symptomatic improvement.

The results obtained in this small series leave much to be desired in the treatment of neurological syphilis. It is difficult for some clinicians to accept the efficacy of the arsphenamines in the treatment of syphilis. Until a more effective method is provided for the management of syphilis in general, it would seem wise to continue with the fever management of neurological syphilis.

Conclusions

1. Fifteen patients with neurological syphilis have been given fever therapy by malaria inoculation. The results are outlined.

2. A method is suggested which is safe and at the same time less expensive for the hospital and the patient.

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The Name of the Game Is Outcome Research

It ought to be! When we buy a car we should be concerned with the incidence of problems reported by other buyers, the actual gasoline consumption, the results of test collisions. If our knee or hip is replaced we and our physician should want to know whether we are better off, more comfortable, more mobile following the procedure.

There can be little quarrel that outcome research is going to be an important yardstick in evaluating the results of our diagnostic and therapeutic efforts.

The same should apply to evaluation of potential models for the United States or State of Connecticut health care reform systems. One such proposed model is monopsony, its prototype most often used is the Canadian system. What is the outcome of this approach advocated by many both in and out of government?

How about the rate of rise of health care costs in Canada in the 1980s compared with ours? After adjusting for inflation, costs rose faster in Canada. Then how could it be that those costs were 10% of Canada's and 14% of our economy? Simply put, Canada's total economy grew much more rapidly than ours did, the part due to health care was correspondingly a smaller portion of the whole. Also, increasing health costs have a lot to do with increasing age, decreasing incomes, and violent crime. Guess who has the older, poorer, more violent society, us or Canada?

Costs per hospital day are higher in the U.S. That's because we shorten lengths of stay thus compressing the time frame for testing and therapeutic procedures. Canada has a much higher length of stay with, of course, a lower daily cost. But what counts would be if our shorter stays improve patient outcomes. The total cost per patient (including home health care) is justified if the outcome is significantly better.

Is the Canadian health care cost more stable compared to our 8% annual growth rate since 1980? Whoa, who says 8%? The Bureau of Labor Statistics. How did they do that? To begin with, their data are based upon list prices. How often do physicians or hospitals collect their usual and customary price, their published price? The hospitals' euphemism for the difference between their published charges and government payments is "contractual allowances." What contract? The government says this is what we pay, no contract. Same with Medicare and Medicaid for our offices. Managed care often requires discounts and risk-sharing shortfalls. The BLS ignores all this and says costs are the amount we would like to get, not what we get.

As the hospital day shortens its costs go up. But what counts, the inflation-corrected cost of an admission, is disregarded in the data. In fact, when a procedure moves from an inpatient to a day surgical setting it is dropped from the hospital list (the reduced cost doesn't show up as a credit) and added to the outpatient list as a wholly new expense.

When we as a nation or state finally decide on the plan or plans for the future, I hope we will anticipate the outcomes of our decisions from the data of parallel or *de novo* experiments. As in the practice of medicine, the practice of financing medical care requires more than intuition; it requires outcome research. I further hope that as we analyze the costs to get the outcomes we deserve, we use standardized comparisons that make sense to most of us, not politically controlled "data" to further one proposal or another.

In any case the outcome is what really counts.

Howard J. Wetstone, M.D.
President

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REFLECTIONS ON MEDICINE

Health Reform: First Moves on the Board

ROBERT U. MASSEY, M.D.

Almost everyone I have talked with agrees that President Clinton's health care reform address to Congress last month was eloquent, comprehensive, and as specific as he could make it given the complexity of the problem and the uncertainties of politics. What is encouraging is that the debate has been opened in the corridors of power and will move inexorably to a conclusion unless some unexpected disaster lands right in the middle of things, dissipating the energy and shattering our attention. The First World War did that 76 years ago when we first began to take this matter seriously, and Watergate seized our interest 20 years ago when we all thought that universal health insurance was no more than months away. History is not quite as simple as that, rarely reducible to a single event, but big things like wars and presidents being forced out of office tend to distract our minds remarkably.

Reform could still move in directions quite different from those outlined by the president. It could bring even more government control and bureaucratic meddling than we now have or, alternatively, someone with sufficient political power might rediscover for us the virtues of the free market and individual responsibility. Government as social welfare is the normal condition for the postwar generation as well as for their offspring now coming into voting age; if anything in society is wanting or if newly discovered rights are to be defended, pass a law, write some regulations, create a new bureaucracy. It will be hard to change a point of view that seems so eminently natural to so many. For those of us whose norm lies in the twentieth century's first half, maybe even in the late nineteenth, all government is suspect and should be held at bay by keeping it on short rations, except in the short run during wars, insurrections. and natural disasters. Though we know market forces are far from perfect for distributing goods and services, nothing has ever worked better in the long run.

Unlike journalists and academics most American politicians have local interests and tend toward pragmatism, avoiding ideological solutions to social problems, which no one understands anyway. For that reason, the new American health care system, the one that may emerge before 1996, will not depart radically from the present arrangements, except that it will seek to cover everyone, and, by the introduction of market incentives may curb our insatiable desire for expensive health care. It may even be confessed that there is no justification, other than politics, for guaranteeing anyone Fortune-500 style health care, nor for denying that all goods and services are already rationed. It may even be confessed that there is no reason why those who can afford it may not have what they want so long as it is legal.

Needs for medical care, preventive and otherwise, are as inevitable as the need for groceries, haircuts, housing, and transportation, and, in fact, just as unreasonable to insure against. Catastrophic medical and hospital bills are the uncertain blows against which most of us with our limited means should be insured. Somewhere in this there is a place for the market to work through individuals, not just big groups or collectives, making choices about what they want or need and are willing to pay for; the welfare state can then step in to provide for the public health, assure decent minimal care for all those unable to pay, and insist upon security against ruin.

Our pragmatic politicians, taking notice of the teetering of foreign governments now laboring under a surfeit of social welfare demands and costs, may turn more to the marketplace discipline than has been their habit in recent decades. Writing of the experience in the United Kingdom, Cavanaugh predicts, "... it is a certainty that over the next five years a market economy will take over the National Health Service."[1]

An instructive debate awaits us, and although I agree with a colleague who said that our instinct for self-protection demands that we remain cynical, it is difficult to suppress moments of an unreasonable but exhilarating sense of optimism.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

REFERENCE

1. Cavanaugh AJM: The rise and fall of socialized medicine in Britain: 1948-1991. *The Pharos* 1993; 56(2):2-4.

PHYSICIAN FOLLOW THROUGH

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This Month's Reading in Review

TIMOTHY B. NORBECK

- In a study conducted by researchers at John Hopkins University and the New England Medical Arts Center, and reported in the *Journal of the American Medical Association* (JAMA), patients were "more likely to be satisfied with the explanation of their treatments from doctors working in their own offices or in small single-specialty groups than from HMOs."... The study also found that independent doctors were easier to reach by telephone and more likely to schedule office appointments on short notice than were doctors in large medical groups and HMOs.... Financed by the federal government, the study analyzed how 17,671 patients rated their treatment in small offices, large multispecialty medical practices, and HMOs with salaried doctors.

- "Health reform is a good idea, but limiting damage awards to victims of medical malpractice is not the way to hold costs down.... malpractice costs only constitute a drop in the cost-containment bucket."

Comments surrounding a position taken at the recent American Bar Association's (ABA) annual meeting.

"Call it cynicism, but the thought does spring to mind that the prospective loss of hundreds of thousands, possibly even millions, of dollars in income plays some role in the ABA's opposition to limiting medical malpractice awards. Anyone who has had dealing with doctors in recent years knows that malpractice suits have been a significant factor in rising health care costs."

Washington Times editorial in response to the ABA position.

- "American companies spend $26 million on health care every hour."

A Clinton Administration op-ed appearing in the *Tulsa World* the day before President Clinton's address (16 August) to the National Governor's Association.

- "The way many medical networks pay their physicians has many people concerned. Instead of paying doctors more for doing more, the networks' flat fee per patient system rewards them for doing less."

New York Times

- Persons who do *not* usually wear seat belts experience 54% more hospital days than those who do wear seat belts.

- According to the National Center for Health Statistics, lifetime medical costs for a male smoker are estimated to exceed costs for a male nonsmoker by 32%.

- On physician fee caps: "I just find it obscene that we would think about regulating a doctor's pay and never raise the issue of rock stars, T.V. anchors or athletes.... It is ludicrous."

H. Ross Perot on C-Span

- "Why is it that government employees report in sick one-third more than the average worker in the private sector?"

The Washington Monthly

- "If you think health care is expensive now, wait until you see what it costs when it's free."

P.J. O'Rourke

- *Only in America:* Two employees of Debest, Inc. (Idaho) responded to a crisis at a construction site involving another man who was buried after a dirt wall collapsed on him. The victim was pulled to safety but only after both his shoulders had been pinned and his muffled screams for help were heard.

The Federal Occupational Safety and Health Administration *fined* Debest $7,875 claiming that the rescuers failed to put on hard hats and took no precautions against other trench walls falling on them. Idaho's OSHA director said that: "Rescues must only be attempted after taking proper precautions to ensure that would-be rescuers are not injured in secondary cave-ins."

Idaho Senator Dirk Kempthorne announced that he is drafting legislation that would exempt acts of heroism from OSHA fines.

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

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Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that the are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

IN RESPONSE TO DR. ARTHUR KOFFLER'S ARTICLE

To the Editor: I am replying in response to Dr. Arthur Koffler's article in the *Connecticut Medicine* Journal, August 1993, page 507. I have also read the response to this article by Dr. James Walker in the same issue.

Both the article and the editorial reply raise several worthy points. In the article, no explanation is given for the patient's inability to rise for 36 hours, secondary to a fall sustained at home. On arrival to the emergency room, her neurologic exam reveals normal sensorium, sensory findings, and motor function. It is therefore unclear whether or not a neurologic or cardiac event occurred at home. This would have important implications regarding her hospital care. As stated, during discharge process, she appears to have suffered a stroke.

Dr. Walker is correct in identifying the location of her stroke as that of basilar artery. However, he is incorrect in stating that basilar artery embolic events are "highly unlikely," especially in this patient with atrial fibrillation. This has been substantiated by several investigatives including Kaplan of Boston. The patient is then noted several days after readmission to be unable to recognize individuals. This indicates a cortical problem and thus one anatomically separate from her stroke.

Finally, the article states that a CT scan was performed on 20 July 1992, four days after readmission. No lesions were seen, which would support a diagnosis of basilar infarct.

There are two important facts to note regarding this case. The first and foremost is that the patient sustained a brain stem event which may very well have been embolic in nature. Had this been hemorrhagic, any additional anticoagulation may have predisposed to further bleed with serious consequences. The second and salient point is that when anticoagulation is instituted in the patient with atrial fibrillation, it is done not to treat strokes that have occurred, but to prevent further strokes from occurring. Additionally, anticoagulation in the acute setting has never conclusively been shown to reverse stroke, only to perhaps halt stroke in progression. Therefore, from a neurologic point of view, anticoagulation before obtaining a CT scan or an MRI, which would have visualized the brain stem better, may have indeed posed a hazard. CT scans and MRIs are now available state-wide on a STAT basis.

I am concerned that this particular case report was published. I feel, as I am sure do most other neurologists, that although certainly well-intentioned, it demonstrates a decision-making process which may not necessarily have been the optimum one. By such an article being published, an impression may be forwarded that, based on the information provided, this was an acceptable treatment approach.

Martin J. Stransky, M.D., F.A.C.P.
Shelton

Dr. Walker responds: Dr. Stransky is correct in his point that anticoagulants should not be administered in the setting of an acute stroke until a hemorrhagic event has been excluded. My editorial on Dr. Koffler's case report addressed the use of anticoagulants in preventing the recurrence of stroke in patients with atrial fibrillation. "Even in the elderly," the preventive benefits of low dose coumadin are major and the risks of serious complications are small. This has not been proven to be the case with aspirin.

In my enthusiasm to reinforce the review article, which addressed this not well-appreciated point in the preceding issue of *Connecticut Medicine* (1993: 57:287-92), I did not focus on Dr. Stransky's well taken criticism.

James E.C. Walker M.D., F.A.C.P.
Farmington

Dr. Koffler responds: The patient's inability to rise for 36 hours is explained by the fact that she was 96 years old, short of stature, and markedly overweight. She said she slipped and fell in the bathroom. She lived alone and was not wearing her Life-Line necklace at the time of the fall. The location of the bathroom would preclude her calls for help from being heard. Her inability to get up by herself after having fallen has been observed on several occasions before and after this hospitalization.

As stated in my article, when I first examined her, she was clear of mind. In my opinion, she had no neurologic or cardiac event that occurred at home. I agree with Dr.

Walker as to the location of her stroke. The rapidity of the anticoagulant treatment would, in my opinion, probably prevent evidence of any trace of an infarction being seen on the CT Scan.

The main thrust of my article emphasizes the fact that this patient was an absolute low normotensive to my personal knowledge, for over 50 years, and was known by me to have nonvalvular atrial fibrillation. I did not intend to suggest that the treatment rendered to this patient be an example to be followed in treating other patients, except in other similar extenuating circumstances. *My case report was not written to be considered a package insert.* Circumstances relating to this patient were most unusual, an exception to the rule.

It is interesting to note that this patient continues to do very well. She was able to dance at a dinner dance held in a hotel, that she attended last New Year's Eve.

I trust that this article will inspire further research in our treatment of stroke. Already, there are investigators who have taken to the idea that stroke might be handled as trauma.[1] I can only hope that my modest contribution of aborting a stroke will be helpful in this direction.

1. Barsan WG, Brott TG, Olinger CP, Marler JR: Early treatment for acute ischemic stroke. *Ann Intern Med* 1989; 111:449-51.

IN RESPONSE TO DR. KING'S ARTICLE

To the Editor: Dr. King's article (*Conn Med* 1993; 8:527-30) on quadriplegia and its treatment is extremely interesting and informative to physicians and other health professionals caring for quadriplegics.

As is well documented by Dr. King. quadriplegics may lead very fulfilling lives with the proper support and equipment. We would like to add that an additional treatment is available in Connecticut to appropriate quadriplegics: phrenic nerve pacing. Phrenic nerve pacing (or diaphragm pacing) was developed by Dr. William Glenn working at Yale. Currently, Yale-New Haven Hospital is one of only a handful of centers to offer the treatment. It is appropriate for individuals with C1-C2 quadriplegia who are ventilator-dependent. It is also appropriate for selected individuals with central alveolar hypoventilation (Ondin's curse).

Many of our patients found Dr. King's article quite informative and unique.

George V. Letsou, M.D.

New Haven

Health Care Reform:
Implications for Patients, Practice, and Progress

13 November 1993
Cambridge Center Marriott, Cambridge, Massachusetts

A conference on health care reform sponsored by
The Beacon Hill Institute at Suffolk University and the Medical Action Committee for Education.

Speakers:

Dr. Francis X. Van Houten, President-elect, Massachusetts Medical Society, Moderator
Dr. Robert McAfee, President-elect American Medical Association, Portland, Maine.
John Goodman, President, National Center for Policy Analysis, Dallas, Texas
Dr. Stephen Cohen, President, Physicians Who Care, San Antonio, Texas
Peter Ferrara, Vice President, The Heritage Foundation, Washington, D.C.
Dr. Jeffrey Flier, Professor, Harvard Medical School, Beth Israel Hospital

The Beacon Hill Institute at Suffolk University focuses on federal, state, and local economic policies as they affect New England citizens and businesses. The institute conducts research and educational programs to provide timely, concise and readable information to help voters, policy makers, and opinion leaders understand today's leading public policy issues.

The Medical Action Committee for Education (MACE) is a nonprofit patient and physician's advocacy organization. It was founded in June, 1993 by Dr. Francis Davis, publisher of Private Practice magazine, and himself, a physician. MACE was created to maintain the quality of the U.S. health care system and protect the sanctity of the patient-doctor relationship.

For further information please contact:\ Dr. Robert A. Sylvester, MACE New England (207) 784-1323, 10 High Street, Lewiston, Maine 04240.

From the Executive Director's Office

CALL
SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1993 Semi-Annual Meeting of the House of Delegates will be held at the Ramada Inn, 275 Research Parkway, Meriden. The meeting will commence at 11:30 A.M. on Wednesday, November 17, and will continue until all business has been concluded.

Howard J. Wetstone, M.D., President
Michael M. Deren, M.D., Speaker of the House
Marjorie G. Petro, M.D., Secretary

11:30 Registration
12:00 Luncheon
Guest Speaker:

1:45 Call to Order
Business of the House

Guest Speaker: Edward R. Annis, M.D., Past President
American Medical Association Chairman
Florida Medical Association Speakers' Bureau

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society provides that:

Resolutions may be introduced by any Active, Life Member, Student Member, or Postgraduate Physician Member of The Society, in compliance with the following provisions.

a. *All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*
b. *Component county associations or the Student Member or Postgraduate Physician Member Associations whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc., be considered regular business if they are received later than fifteen days prior to the date of the meeting.*
c. *Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of the Society at any time and shall be considered as regular business.*
d. *Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provisions of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

COUNCIL MEETING

Thursday, 1 September 1993
Ramada Inn, Meriden

Attendance

Present, in addition to the chairman, Dr. Joseph Czarsty were: Drs. Ahamed, Beck, Bigos, Blum, Bobruff, Brooks, Cottle, Eslami, Fischbein, Franklin, Freedman, Geary, Herzog, Hollister, Kamens, Keating, Lesnik, McDonnell, Meridy, Redmond, Sadowski, Scarpa, Schwartz, Sosa, Tesoro, Timmerman, Wetstone, Wolfson, Zanker.

Also present were: Mr. Norbeck, Mrs. Lindquist, Mr. Sullivan, Mr. Garofalo, Mr. Staples, Mr. Coffey (HCMA).

Absent were: Drs. Deren, Leach, Parke, Petro, Van Nostrand.

Reports of Related Organizations

CPRO: Dr. Kamens reported that the Fourth Scope of Work, which emphasizes pattern analysis, will go on line about October 1. PRO review has been going on for eight and one half years. A great deal of information has been gathered and some will be distributed to hospitals and their medical staffs, giving state and hospital comparison studies without identifiers. The Cooperative Cardiovascular Project is being reported on in Baltimore as one of the two pilot studies made in Connecticut. This has been a very arduous task working out the algorithms of care, parameters of care, and compliance with care. The first part has been the acute myocardial infarction study which Connecticut has already reported on and is now being duplicated in two other PROS. Dr. Kamens reported that he has been asked to make a presentation to the Virginia PRO that will be done in conjunction with a panel with Senator Dole and Senator Rockefeller. CPRO has been selected to inform Helen Smits, M.D., Deputy Director of HCFA, and formerly with the University of Connecticut, about recent PRO activities in quality of care in Connecticut.

CSMS-CNA Meeting: Dr. Beck, Chairman of the Committee on Allied Health, reported that members of the Committee on Allied Health along with Drs. Wetstone, Brooks, and Kamens have been meeting with the leadership of the Nurses' Association. The Nurses' Association had distributed to the committee a comparison of the key elements in their nursing program for national health compared with the AMA, Blue Cross, and American Hospital Association's suggestions. It was also reported that the meetings have been constructive and the committee is of the belief that much of the health care program is going to be established at the state level and are hopeful that they can work with the nurses and agree on many items and propose jointly some health care programs, recognizing that there are some issues where there will be disagreement and feel that together they can make their joint efforts stronger and more meaningful.

Report of the President

(a) Dr. Wetstone reported that he was asked to recommend names to serve on a panel at the Connecticut Nurses' Association meeting concerning health care reform. The names of Drs. Beck and Brooks were suggested and approved.

(b) Dr. Wetstone stated he also received a letter from the State's Attorney's office informing him that as President of CSMS, he was given statutory authority to appoint two members to the Commission on the Standardization of the Collection of Evidence in Sexual Assault Cases. They requested the names of an obstetrician/gynecologist and pediatrician. Also on the Commission would be representatives for CHA, Emergency Room Nurses, and Physicians.

(c) It was VOTED to approve Dr. Wetstone's suggestion that an Ad Hoc Committee be authorized to develop a program to improve the image of the physicians. The President-Elect and Vice-President were appointed co-chairpersons, who would select additional members for the committee. Dr. Zanker stated that it is proposed to have a small committee to develop a proactive program and bring it back for the consideration of the Council. The committee would try to develop in an organized fashion a meaningful program as to how to approach the media and how to identify those physicians who have expertise in public speaking.

(d) Dr. Wetstone reported that in response to the discussion regarding health system reform at the last Council meeting, a meeting of the CSMS leadership and staff was held to begin preparing for the upcoming reform activities at the state and federal levels. He stated that CSMS needs to broaden its current "Statement on Health Care Reform" and to take a hard look at the numerous issues expected to be included in the Clinton Plan. He stated that it is important that CSMS take a position on any of the reform issues that we want to influence and that we begin to position ourselves in the political debate. A document entitled "Developing CSMS Health System Reform Strategy" was mailed with the agenda to all Council members. The document included a brief update of the status of the federal and state health system reform activities and a detailed suggested planning outline and timetable of CSMS activities for the remainder of the year. The goal is to be prepared to respond to the federal proposal and to participate in the 1994 state legislative debate. Dr. Wetstone reviewed the document and following discussion, it was VOTED to accept the report and forward it to the Ad Hoc Health Care Reform Connecticut Task Force for implementation.

Report of the Executive Director

(a) ***CSMS Staff:*** Mr. Norbeck reported that Robert Brunell, Director of Scientific Affairs, had recently undergone bypass surgery and is doing well. He also introduced Cameron Staples, who rejoined the staff as legal counsel.

(b) ***Renovation Update:*** Mr. Norbeck reported that ACMAT has completed approximately 80% of the demolition work in the basement and 40% of the demolition work on the first and second floor. All asbestos pipe insulation uncovered during this demolition work has been removed. ACMAT estimates completing the job by mid-November which appears to be very optimistic. He reported that there has not been any down time yet, despite the jackhammering, loss of air-conditioning for several days, loss of telephones for a day, etc. Staff is crammed in the Council room and the President's room and is holding up well despite the many inconveniences.

(c) ***Health Care Reform:*** He reported that a couple of other significant items relating to health care reform bear watching for the next few months. The Vermont Health

Care Authority will present to the legislature by 1 November 1993 two separate proposals. The first will be a government run, single payer system, financed primarily through payroll taxes. The second will retain and highly regulate a multipayer system. Both proposals would require every employer and most Vermonters to pay into the new system. Neither plan has the required political strength to make it through the legislature. Governor Howard Dean, a physician, says he will have his own proposal and declared that the state can only afford to raise about 30 million dollars in taxes next year. Sixty-five million dollars will be needed to provide universal access. The Governor suggested that Vermont residents will have to pay deductibles and a portion of their medical bills, a comment that has not been happily received by many consumers with fixed budgets for health care. The Vermont State Medical Society supported the bill setting up the Vermont Health Care Authority and the introduction of two proposals, but now it feels betrayed because both plans are too heavily regulated and there is no financing and talk of provider taxes.

(d) ***Clinton Plan:*** Mr. Norbeck reported that another item impacting on the Clinton health care reform effort is the bickering going on between the United Auto Workers and the big three automakers. In its contract proposal to the United Auto Workers, Chrysler asked for "health care concessions" by asking the union workers to begin making copayments. UAW's response was that the word copayment was not in the current contract and won't be in the future ones and that the company might need a strike to take the union seriously. Actually, Ford Motors will be first at putting together a contract that will affect the 400,000 autoworkers over the next three years. Ordinarily, the union picks out General Motors as the negotiating target which sets the tone for the other two. UAW put its hope on Ford, however, for giving it the best chance of preserving past contract gains. Ford is the target because they are in the best position financially of the big three. Ford won't be an easy mark, however, and federal lawmakers will be wise to follow these negotiations, since they relate to what President Clinton is going to try to do, raising money that isn't there and taxes, etc.

Despite that almost everyone is saying, including both parties of the legislature, that federal health care reform is at least one year away. White House Chief of Staff, Mac McLarty, told the Arkansas Gazette that he expect health care reform to pass Congress in the fall.

Nominations for Position on AMA Councils

A list of the present membership of all AMA Councils indicating the members' eligibility for reappointment or reelection was reviewed. It was VOTED to submit the name of Joseph S. Sadowski, M.D. for membership on the Council on Legislation

Date of Future Meeting

Thursday, 14 October 1993

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on 1 September 1993. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

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Call for Papers

1994 International Conference on Physician Health
September 16-20, 1994. Ottawa, Ontario, Canada

"Stress: The Profession, the Family and You"

The 1994 International Conference on Physician Health, co-sponsored by the American Medical Association, the Federation of State Medical Boards, the Canadian Medical Association, and the Federation of Medical Licensing Authorities of Canada is scheduled for September 16-20, 1994, at the Ottawa Westin Hotel.

Ottawa is Canada's capital and offers many national museums, over 60 miles of bicycle paths, hiking in Gateneau park, squash courts and swimming at the hotel and golf nearby.

The conference will provide a forum for practitioners and researchers to present recent findings and innovative treatment and education programs in physician health. This conference will address a range of issues, such as AIDS, HIV, problems related to aging, mental illness, substance abuse and physical disabilities and limitations, including those caused by general medical conditions. Possible topics for presentation include: presentation and treatment of health problems among physicians, the impact of disorders on physicians' families and practices, medical-legal issues facing hospital administrations and licensing boards, and material on health promotion and disease prevention. *Abstracts which address issues related to these topics (i.e., prevention, diagnosis, treatment, rehabilitation), but not dealing specifically with physicians are also welcome.*

Three types of presentations regarding these physician health issues are invited:

- **Poster Presentations**
  Written presentations of data-based research, epidemiological research, or program descriptions.
- **Paper Sessions**
  Oral presentation of scientific, data-based findings relative to the topic of physician health.

  Abstracts for poster presentations and paper sessions should contain an introductory statement on the significance of subject matter. Description of methods, results, and conclusions should follow the introductory statement.
- **Workshops**
  Training or instructional presentations, designed to improve specific skills of persons who work in the area of physician health.

  Abstracts for workshops should contain information on the program's intended audience, goals, teaching strategies, and materials. Evaluation data should be summarized

Abstracts may not exceed 200 words. Any abstracts exceeding that length will be rejected. Abstracts should be typed, double spaced, and mailed (not faxed). Four copies of the abstract should be sent, along with one self-addressed, stamped envelope. All submissions must list the primary and secondary authors and their professional affiliations. Telephone number and address of primary author must also be included.

Submissions *must* be received by February 1, 1994.

Abstracts will be submitted for blind review. Abstracts will be judged on their applicability to the conference topic area and their scientific merit. The decisions of the blind reviewers will be communicated to the abstract's primary author by April 1, 1994.

All presenters are expected to register for the conference at the AMA member rate. We are unable to provide any financial support for presenters. Presenters will also be responsible for their own transportation and hotel expenses, as well as making all reservations for same.

Send all materials to:
Elaine M. Tejcek, Physicians Health Foundation, American Medical Association, 515 N. State Street, Chicago, IL 60610.

American Medical Association
Physicians dedicated to the health of America

IN MEMORIAM

FAZZONE, ANDREW C., Seton Hall Medical College, 1961. Dr. Fazzone maintained a private internal medicine practice in Bridgeport since 1967 and served as a staff physician at Bridgeport Hospital. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Fazzone died 25 July 1993 at the age of 58.

FORREST, ARNOLD W., New York University School of Medicine, 1942. Dr. Forrest, an ophthalmologist, retired from private practice in Wilton in 1991. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Forrest died 13 June 1993 at the age of 73.

GALLO, ERLY PAUL, Jefferson Medical College of Thomas Jefferson University, 1965. Dr. Gallo practiced family medicine in Winsted for over 30 years prior to moving to Ocala, Florida in 1991. He was a member of the Litchfield County Medical Association and the Connecticut State Medical Society. Dr. Gallo died 16 July 1993 at the age of 58.

LOVALLO, FRANK, Tufts Medical School, 1944. Dr. Lovallo was a member of the medical staff at Sharon Hospital until his retirement in 1985, serving three terms as chief of staff and as chief of surgery from 1968 to 1969 and again from 1970 to 1981. He was a member of the Litchfield County Medical Association, serving as secretary-treasurer from 1959 to 1980 and also a member of the Connecticut State Medical Society. Dr. Lovallo died 26 June 1993 at the age of 74.

MILANO, NICHOLAS A., Georgetown Medical School, 1927. Dr. Milano served as a West Haven city health officer from 1933 to 1937 and from 1956 to 1981. He maintained a general practice in West Haven for over 58 years and was a staff member at St. Raphael's Hospital prior to his retirement in 1987. Dr. Milano was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Milano died 16 August 1993 at the age of 90.

STERRETT, RAYMOND A., Cornell University Medical College, 1939. Dr. Sterrett was in general practice for over 40 years and on the staff of Bridgeport Hospital prior to his retirement. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Sterrett died 6 May 1993 at the age of 88.

STETSON, HAROLD P., Boston University School of Medicine, 1941. Dr. Stetson practiced family medicine in Southington for 44 years prior to his retirement in 1991, in addition to serving as plant physician and safety supervisor at Pratt and Whitney. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Stetson died 17 July 1993 at the age of 79.

STEVEN, RANALD J., London Hospital Medical College, 1943. Dr. Steven was an anesthesiologist at Hartford Hospital for 39 years prior to his retirement in 1989. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Steven died 29 July 1993 at the age of 73.

WIESEL, BENJAMIN, New York Medical College, 1936. In 1948, Dr. Wiesel set up one of the first general hospital psychiatric units in the country at Hartford Hospital. Prior to his retirement in 1992, Dr. Wiesel served as head of the department of psychiatry at the University of Connecticut School of Medicine. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Wiesel died 12 August 1993 at the age of 82.

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1. Jones J: Necrotizing *Candida* esophagitis. *JAMA* 1980;244:2190-1.
2. Kremer H, Kellner E, Schierl W, et al: Ultrasonic diagnosis in infiltrative gastrointestinal diseases. *Dtsch Med Wochenschr* 1978;103:965-6. Abstracted, *JAMA* 1978;240:2784.
3. Influenza vaccine—recommendations of the Public Health Service Advisory Committee on Immunization Practices. *MMWR* 1979;28:231-8.
4. Fischer DH: *Growing Old in America.* New York, Oxford University Press, 1977, pp 210-6.

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Predictors of Perioperative Morbidity and Mortality in Repeat Valve Replacement: A Seven-Year Experience

STUART HOUSER, M.D., JHONNY SALOMON, M.D., NILTO CARIAS, M.D., FAYYAZ HASHMI, M.D., TIMOTHY LEHMANN, M.D., AND SURENDRA CHAWLA, M.D.

Abstract

Forty-nine consecutive repeat cardiac valve replacements in 46 patients were reviewed to define in-hospital morbidity, mortality, and determinants of risk. The overall operative mortality rate was 10.2%; it was 9% for the first reoperation and 25% for the second (four patients). The mortality rate was 12% at the mitral position (25 patients), 11% at the aortic position (18 patients), and 0% for repeat double valve replacement (four patients). Univariate and multivariate stepwise logistic regression models show that age over 70 years and the use of an intraaortic balloon pump preoperatively predict operative mortality, and age over 70, preoperative care in the coronary care unit, endocarditis, and the presence of an intraaortic balloon pump are determinants of perioperative morbidity in patients undergoing repeat valve replacement.

Based on these data, close follow-up of patients with initial valve replacement is encouraged so that reoperation to correct prosthetic malfunction or periprosthetic leak can be done before hemodynamic collapse occurs. Furthermore, since age was the most significant factor affecting mortality (*P* < .01) and since most of the deaths (80%) in this study occurred in patients with torn bioprosthetic leaflets, the use of bioprostheses for initial valve replacement in patients under 70 years of age is discouraged.

Introduction

IN order to assess the perioperative risk of morbidity and mortality associated with repeat cardiac valve replacement, 49 consecutive valve reoperations in 46 patients from March 1984 through December 1990 were reviewed. This study examines in a private practice setting the population of patients requiring repeat valve replacement, types of valve prostheses replaced and the types chosen to replace them, the surgical risk of these procedures, and an evaluation of patient status in follow-up. Comparison of this series of patients is made with similar groups of patients reported elsewhere in the literature.

Material and Methods

Forty-six patients underwent 49 repeat valve replacement (RVR) operations. The 17 males and 29 females ranged in age from 30 to 86 (mean 62.6) years. Nine patients were diabetic, four were hypertensive, and six had a clinical diagnosis of endocarditis. Mitral regurgitation was the chief clinical diagnosis in 24 patients (49%) and aortic regurgitation in 14 patients (29%). The remaining patients presented with mitral regurgitation plus aortic regurgitation (4), mitral stenosis (3), aortic stenosis (3), and aortic valve prosthetic infection (1). Eight patients had significant coronary artery disease. Seven patients had concomitant native valvular disease, including

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aortic stenosis (1), aortic regurgitation (2), mitral regurgitation (2) tricuspid regurgitation (2). One patient was in New York Heart Association (NYHA) Class I, eight in Class II, 21 in Class III, and 16 in Class IV. Functional class was undefined in three patients. Fourteen patients (29%) were in the coronary care unit (CCU) preoperatively.

Four patients required intraaortic balloon pump support, one preoperatively and three intraoperatively. A left ventricular assist device was placed in one patient.

All operations were done through median sternotomies using standard techniques of cardiopulmonary bypass and moderate systemic hypothermia. With single aortic cross-clamping, cold crystalloid (potassium-insulin-glucose) cardioplegic solution was used in multiple antegrade doses to keep myocardial temperature below 20° C. New valve prostheses were seated with interrupted nonabsorbable sutures with teflon pledgets. Operative procedures included repeat mitral valve replacement (24), repeat aortic valve replacement (17), repeat combined mitral and aortic valve replacement (4), second repeat mitral valve replacement (3), and second repeat aortic valve replacement (1). As Table 1 indicates, 35 patients underwent RVR alone, and 14 patients required concomitant procedures in addition to RVR. Forty-six porcine and seven mechanical valve prostheses were replaced, totaling 31 in the mitral position and 22 in the aortic position. These old prostheses were replaced by 25 new porcine valves and 29 mechanical valves. In addition, three porcine and one mechanical valve prostheses were used in native valve replacement, three mitral and one aortic. Follow-up was by direct contact with patients or relatives or through referring physicians.

Statistical Analysis

Univariate testing of preoperative variables for morbidity and mortality and multivariate testing of these factors for mortality were done by logistic regression analysis. Statistical significance was achieved if the *P* value was less than .05 by χ^2 analysis or Fisher's exact test.

Results

The mean operative interval for patients undergoing porcine prosthesis replacement was 7.8 years both in the mitral as well as the aortic position. The mean interval for patients having mechanical valves replaced was 6.8 years in the mitral position and 5.8 years in the aortic position. Table 2 defines the pathology found in these 53 prosthetic valves. Most of the porcine prostheses had leaflet tears, and six of the seven mechanical valves replaced malfunctioned because of thrombus.

The five operative deaths (10.2%) included patients 70 to 86 years of age (mean 75.8). One was in NYHA Class II, one in Class III, and three in Class IV. Two of these

Table 1.—Repeat Valve Replacement

Combined Procedure	**RMVR**	**RAVR**	**RMVR & RAVR**	**RRMVR**	**RRAVR**	**Total**
None	17	13	3	2		35
MVR		3				3
TV Ring	2					2
CAB	2		1	1		4
RCAB	1					1
CAB & ASD Closure	1					1
CAB & AVR	1					1
CAB & Annular Reconstruction		1				1
Annular Reconstruction					1	1
Total	**24**	**17**	**4**	**3**	**1**	**49**

RMVR = Repeat mitral valve replacement; RAVR = Repeat aortic valve replacement; RRMVR = Rerepeat mitral valve replacement; AVR = aortic valve replacement; ASD = atrial septal defect; RRAVR = Rerepeat aortic valve replacement; MVR = mitral valve replacement; TV = tricuspid valve; CAB = coronary artery bypass; RCAB = redo coronary artery bypass.

Table 2.—Repeat Valve Replacement

Prosthetic Valve Pathology	**Porcine**	**Mechanical**	**Total**
Leaflet Tear/Degeneration	30	0	30
Sclerosis/Calcification/Thrombosis	12	6	18
Vegetation/Inflammation/Fibrin	3	0	3
Perivalvular Leak	1	1	2
Total	**46**	**7**	**53**

Table 3.—Repeat Valve Replacement
Operative Deaths

Procedure	**Old Prosthesis**	**New Prosthesis**	**Post-op Survival** (days)	**Cause of Death**
RMVR	Porcine	Porcine	0	Bleeding
RMVR	Porcine	Porcine	72	Low c.o.,* sepsis
RRMVR & CAB	Porcine	Mechanical	1	R.V. failure
RAVR	Mechanical	Porcine	3	Bleeding
RAVR	Porcine	Porcine	19	Arrhythmia

*cardiac output

patients were in the CCU preoperatively and one required intraaortic balloon pump support. As seen in Table 3, two patients died because of bleeding, two with low cardiac output, and one with a severe ventricular arrhythmia.

Postoperative complications not associated with mortality included mediastinal bleeding requiring exploration in two patients, low cardiac output in two, heart block requiring permanent pacemaker placement in four, ventricular arrhythmia in one, endocarditis requiring second repeat valve replacement in two, and stroke in one. The mean hospital stay in patients who survived their operations was 14.9 days and did not vary essentially with age below or over 70, single valve replacement in the mitral or aortic position, or repeat mitral plus aortic valve replacement. Patients surviving RVR plus coronary artery bypass were in the hospital on average 13.3 days postoperatively.

Table 4 lists variables tested to predict postoperative morbidity and mortality. Significant determinants of morbidity included age over 70, endocarditis, intraaortic balloon pump support and preoperative stay in the coronary care unit (CCU). Age over 70 and the need for an intraaortic balloon pump were significant predictors of mortality by univariate testing. Using multivariate analysis, age over 70, preoperative stay in the CCU, and the need for an intraaortic balloon pump predicted mortality 66% of the time.

Follow-up data were acquired for 40 patients (87%). Three males and five females were deceased. Four had undergone repeat mitral valve replacement, two repeat aortic valve replacement, and two repeat mitral plus aortic valve replacement. Half of these patients had been in the CCU preoperatively. Four died of cardiac cause, one of noncardiac causes and in three patients the cause of death was unknown. Six patients died between three and 53 (mean: 19) months postoperatively; times of death of the other two patients could not be determined.

Thirteen males and 19 females were alive two to 120 (mean 39) months postoperatively. Seven of these survivors (22%) had been in the CCU preoperatively. Nineteen

Table 4.—Univariate Testing of Preoperative Variable

Factors	*P* Value for Mortality	*P* Value for Morbidity
Age over 70	0.03	0.029
Gender	0.9	0.6
Endocarditis	0.16	0.016
Diabetes	0.9	0.48
Hypertension	0.3	0.75
CCU Preoperatively	0.25	0.04
Intraaortic balloon pump	0.04	0.009
Concomitant CAB	0.82	0.89
NYHA Class	0.47	0.13
Valve pathology	0.2	0.08
Type of surgery	0.9	0.7

CAB = Coronary artery bypass
CCU = Coronary Care Unit
NYHA = New Hork Heart Association

Table 5.—Repeat Valve Replacement

Author, et al	N	Operative Mortality Rate (%)
Bartolotti—1985	88	12.5
Lytle—1986	559	10.9
Magilligan—1989	176	12.5
Bloomfield—1991	85	18.9
Burdon—1992	395	9.4
Kawachi—1992	68	5.9
Cohn—1993	640	10.2
Houser—Present	49	10.2

Table 6.—Repeat Valve Replacement

Old—New Prosthesis	N	Mean Patient Age (years)
Porcine — Porcine	23	66.8 → 67.3
Mechanical — Porcine	2	73.0
Porcine — Mechanical	19	59.2 → 57.6
Mechanical — Mechanical	5	51.8
Total	**49**	**62.8**

of these patients (59%) were doing well and nine (28%) fairly well. Three patients remained symptomatic and one had just undergone a second repeat valve replacement at another hospital. Twenty-six survivors (81%) were glad that they had had their RVR, and one was resigned to the fact that the operation had to be done. The attitude toward surgery was not defined in six patients. As seen in Fig. 1, 27 patients (84%) had an improved NYHA class at the time of follow-up.

Discussion

Until a valve prosthesis is developed that will neither deteriorate nor be thrombogenic, patients requiring valve replacement will possibly be faced with a need for reoperation, the probability of which will depend on the valve prosthesis used initially. Kawachi and associates point out that the 10 year rate of freedom from structural bioprosthetic tears in mitral or aortic valves varies from 70% to 80% and that it increases with age of patients.[1] Other authors found that freedom from structural porcine valve deterioration was 85% at 10 years and 63% at 15 years in the aortic position *v* 78% and 45% at 10 and 15 years in the mitral position.[2] They also noted that younger age (less than 60 years) was associated with higher risk of structural valve deterioration. Furthermore, they found that female gender predicted increased structural valve deterioration in the mitral position. Magilligan and associates found conflicting data in their early experience[3] but more supportive findings in their more recent study.[4]

The rate of thromboembolism from mechanical valves is currently 0% to 2.1% per patient year for aortic valve replacement and 1.2% to 3% per patient year for mitral valve replacement with anticoagulant therapy.[1] Martinell et al, have stressed that anticoagulant regimens do not preclude the risk of valve thrombosis in patients with mechanical prostheses.[5] They found that at the time of hospitalization only 60% of their patients with mechanical valves had prothrombin times within the therapeutic range. In a randomized, prospective trial comparing Bjork-Shiley *v* porcine valve replacement in 541 patients, Bloomfield and associates found no significant difference in actuarial incidence of reoperation after five years; but after 12 years, significantly more patients with porcine prostheses had undergone repeat valve replacement, and survival in the Bjork-Shiley group was better, although they had more bleeding problems associated with anticoagulation.[6] Others have pointed out on the basis of randomized trials comparing mechanical and porcine prostheses that prosthetic valve endocarditis, thromboembolism, and overall survival are not significantly different even after 10 to 12 years.[2] They suggest that the risk of higher reoperation rate beyond the six to eight-year threshold in the group with porcine valves is offset by anticoagulant-related hemorrhage and thromboembolism in the mechanical group as long as operative mortality rate in repeat valve replacement is reasonably low, that is, around 10%. Early experiences and one recent series reflect substantially higher operative mortality rates.[6-9]

As seen in Table 5, the operative mortality rate of this series of patients as well as that of five other reports of the past decade approximate 10%.[2,4,10-12] In the current series of patients, history of diabetes or hypertension was not a significant predictor by univariate analysis of morbidity or mortality. Neither valve pathology nor operative procedure (repeat aortic, mitral, or double valve replacement) was a significant predictor of operative mortality. In contrast to another report,[13] this study found that concomitant coronary artery bypass with repeat valve replacement was not a significant factor for mortality or morbidity (Fisher's exact test). Likewise, contrary to past reports,[11-14] NYHA class per se did not predict operative mortality in this study. More sensitive markers of urgency of operation and hence higher operative risk are preoperative care in the CCU and the need for intraaortic balloon pump support.

Age 70 or over was associated with a mortality rate of 25%, *v* 3% for patients under 70 years of age ($P < .04$). Use of an intraaortic balloon pump ($P = .04$) predicted mortality, and care in the CCU preoperatively ($P = .25$) approached statistical significance. Age over 70, preoperative care in the CCU, and intraaortic balloon pump support could predict mortality 66% of the time by multivariate regression analysis. When variables were tested for morbidity, age over 70 ($P = .029$), endocarditis ($P = .02$), and intraaortic balloon pump support ($P = .01$) were significant.

The mean age of patients in this series receiving porcine valve prostheses was almost 10 years higher than that of patients receiving mechanical valve prostheses in their reoperations (see Table 6). This finding is consistent with a realization that reoperation for valvular heart disease carries a higher risk of mortality than primary valve replacement and that age is a major determinant of mortality following repeat valve surgery.[11] Lytle et al have also found that second reoperations were not more hazardous than first repeat procedures, but third reoperations did carry higher risk of mortality.[11] In discussing Lytle's paper, Kirklin reported that second repeat valve replacement did carry higher risk of mortality than the first repeat procedure in their experience. The current study suggests a higher risk of mortality with the second reoperation, although four patients are too few to provide conclusive data. Given the finding here and elsewhere that primary tissue failure is the most frequent indication for repeat valve replacement in patients with porcine valve prostheses,[10] this study supports the conclusion of Cohn's group that these prostheses should not be used in patients under 70 years of age unless anticoagulation is contraindicated,[12] clarifying the statement by Magilligan et al that porcine valves should be used only in "older" patients.[4]

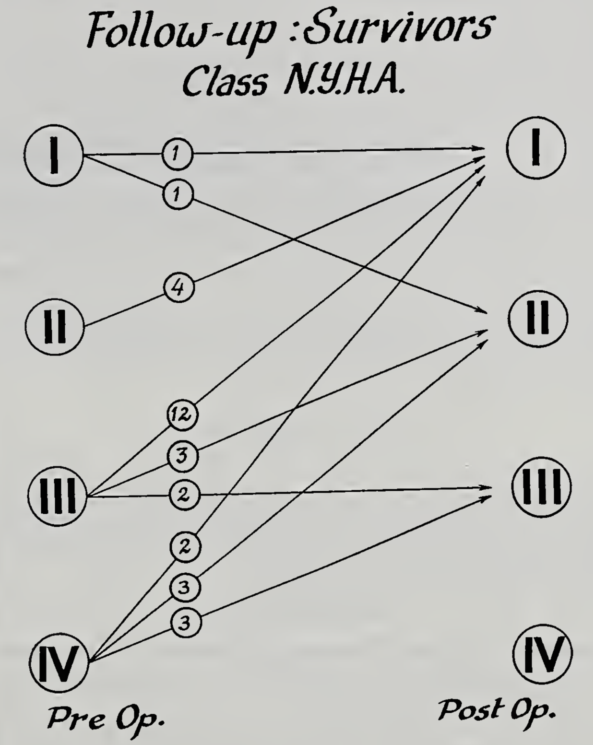

Figure 1.—Improved = 27 (84%)
Unchanged = 3
Lower = 1
Unknown = 1
32

Four of the eight late deaths (50%) occurred in patients who required preoperative care in the CCU, whereas only 22% of the follow-up survivors did. This finding supports a contention of others that poor long-term results reflect advanced deterioration of cardiac function which may not be reversible.[8]

In summary, age over 70 and hemodynamic instability increase the risk of operative mortality in patients undergoing RVR. Endocarditis and intraaortic balloon pump support were significant determinants of morbidity. Follow-up data indicate that most patients who survived repeat valve replacement show marked improvement in their functional class. With a perspective of appropriate guidelines,[15] analysis of data such as these provides an important basis for selecting the best prosthetic valves for patients requiring valve replacement.

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Smoking Prevalence Among Perinatal Women: The Role of Socioeconomic Status, Race, and Ethnicity

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ABSTRACT—Baseline data were collected as part of an intervention project designed to reduce substance abuse among pregnant and postpartum women in Waterbury. Personal interviews, including questions on smoking behavior were conducted with a sample of 503 perinatal women. African American and Hispanic women represented respectively 11.8% and 10.2% of the population. Twenty-six percent of respondents reported they smoked cigarettes during pregnancy which exceeds the nationally comparable rate of 19.1%. Socioeconomic status was a stronger predictor of smoking status than other sociodemographic variables. Logistic regression analysis showed that lower socioeconomic status women were 3.7 times ($P < .001$) more likely to smoke during pregnancy than their higher status counterparts. Hispanics were 70% ($P < .01$) less likely to smoke than Whites and there were no significant differences between respondents based on race, marital status, age, or source of prenatal care. The authors conclude that smoking during pregnancy continues to be a major problem requiring multifaceted interventions and attention to underlying structural factors.

CIGARETTE smoking is the most prevalent addiction among American women. Moreover, it has long been established that cigarette smoking is detrimental to infants. Smoking cigarettes during pregnancy is a major cause of low birth weight[1-4] and low birth weight is regarded as the single most important determinant of perinatal mortality.[5-6] Compared to nonsmokers, women who smoke during pregnancy have twice the adjusted relative risk of delivering a low birth weight infant as nonsmokers.[7] Investigators have estimated the average birth weight difference of the infants of prenatal smokers and abstainers at between 150-200g.[8]

Other poor pregnancy outcomes associated with smoking are preterm rupture of the membranes,[9,10] spontaneous abortions and congenital abnormalities,[11] increased fetal heart rate and body movements,[12] and impaired pulmonary function.[13] Cigarette smoking is also a major cause of morbidity and mortality from such chronic maladies as lung cancer, cardiovascular illness, and chronic obstructive pulmonary disease. Many of the pregnant women who smoke will have difficulty quitting postpartum[14,15] and consequently will increase their own susceptibility and that of their children to these as well as other diseases. A recent study found increased asthmatic incidents among children who were exposed to parental tobacco smoke.[16]

Studies have demonstrated consistently that women have lower smoking prevalence rates than men. Data from the 1991 National Health Interview Survey (NHIS)[17] indicate that 23.5% of women and 28.1% of men over the age of 18 are current cigarette smokers; trends in declining smoking rates have leveled off. The rate of decline in prevalence among men has been greater than that among women.[18] More alarming is the fact that younger women have increased their smoking at a significantly greater rate than similarly aged men. Thus there appears to be a convergence in prevalence rates among the groups.[19] Smoking prevalence has also been shown to vary considerably according to race and ethnicity[20] and socioeconomic status.[17,18,20-23]

In Connecticut, according to the 1988 Behavioral Risk Factor Surveillance System (BRFSS), 25.8% of women reported they were current cigarette smokers.[24] Sackmary,

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in a 1989 survey of public attitudes about cancer prevention, found a smoking prevalence rate of 27% among women in Connecticut.[25] The 1989 (BRFSS) findings indicate an even higher smoking prevalence rate (34.8%) among women of reproductive age (ie, between 18-44 years old).[26] Nationwide data from birth certificates reveal that 19.1% of women reported smoking during their pregnancy although this rate varied with socioeconomic status.[20]

Given the extent of tobacco use among women and the fact that close to 50,000 births occurred in Connecticut during 1991, there is a need for effective public policy measures and health intervention programs to address this problem among pregnant women. The aim of this paper is to provide an epidemiologic overview of the characteristics of perinatal women in Waterbury who smoked cigarettes during pregnancy and to offer suggestions to improve research and interventions targeting pregnant women who are smokers.

Methods

Face-to-face interviews were conducted with a sample of consenting women during the postdelivery period (usually within 24 hours) at two hospitals in Waterbury, between 1 April 1991 and 31 January 1992. The research was conducted in conjunction with a substance abuse project involving pregnant women. Potential respondents had to be 18 years or older and in the perinatal stage of pregnancy, and became actual respondents by agreeing to be interviewed, signing an informed consent statement, and agreeing to being available.

The underaged (ie, <18 years of age) and language barrier groups reduced the potential number of acceptable participants from 773 to 732. Of this number, 78 women (10.7%) refused to participate in the study, and of the remaining 654 potential respondents, 88 (13.5%) women were not presented the informed consent form because they were discharged earlier than expected from the hospital. Informed consent was obtained from 561 women, but 44 (7.8%) women who signed the informed consent statements also left before they could be interviewed. Ultimately, 503 women or 89.6% of those who consented were interviewed. Respondents in this study comprised a convenience sample, possibly resulting in self-selection and underreporting. Studies examining the reliability of surveys on smoking behavior have found that populations not involved in smoking cessation programs accurately report smoking status while the actual amount or frequency of smoking may be underreported.[27-30] To decrease underreporting by subjects, the team relied on the following techniques: 1) training of interviewers to be nonjudgmental; 2) asking only a few questions related to sensitive topics; 3) emphasizing confidentiality; and 4) informing respondents of the positive ways that these data would be used to benefit pregnant women.

Demographic Characteristics.—The racial and ethnic composition of the sample reflects the characteristics of women in Waterbury according to the 1990 U.S. Census Bureau report. African-American and Hispanic respondents comprised 22% of the sample (respectively 11.8% and 10.2%), and 76% were white. Other racial and ethnic groups constituted 2.0% of the sample.

Table 1 shows that, on average, black and Hispanic respondents were younger than their white counterparts. About the same proportion of black and Hispanic respondents, 62.7% and 66.7% respectively, were between the ages of 18-25. In contrast, a considerably smaller proportion (27.1%) of whites were in the 18-25 year-old cohort.

Seventeen percent of respondents did not graduate from high school. High school graduates comprised 30.8% of the sample and more than half of the respondents (51.9%) had some college education. However, as seen in Table 1, nonhigh school graduation rates (ie, < 12 completed years of education) varied according to race and ethnicity. Almost half of Hispanic women were nonhigh school graduates compared to 27% of African Americans and about 12% of whites.

Table 1.—Demographic Characteristics by Race and Ethnicity

	Blacks n=59	**Whites n=380**	**Hispanics n=51**	**Total n=503***
Mean age	25.2	28.1	24.5	27.4
Mean years education	12.3	13.4	11.4	13.1
Mean years residency	15.2	12.4	7.1	12.1
%Nonhigh school graduates	27.0	11.6	49.0	17.3
%Unmarried	75.0	17.6	53.0	28.2
%Receiving public assistance	35.6	9.7	56.9	18.3
Lower SES†	40.7	17.1	64.7	24.9

*Numbers do not total because of cross-tabulated computations.

†Socioeconomic status.

Twenty-eight percent of respondents were unmarried and less than 20% of the sample reported that they received some form of public assistance. Substantial differences existed between African Americans, Hispanics, and whites regarding marital status and public assistance (Table 1). Three quarters of African Americans and slightly more than half of Hispanics reported they were not married. A greater proportion of Hispanics (56.9%) were recipients of public assistance than either blacks (35.6%) or whites (9.7%).

A composite socioeconomic status (SES) variable was developed consisting of the public assistance and education variables. Respondents who were not recipients of public assistance or who had greater than or equal to 12 years of education represented the higher SES category (74.8%). The lower value of the SES variable consisted of those who were on public assistance (regardless of educational attainment) and persons who were not on public assistance but had completed less than 12 years of education (25.2%). Blacks (40.7%) and Hispanics (64.7%) were disproportionately located in the lower socioeconomic strata.

Results

Smoking and Pregnancy Behavior.—This section presents the result of bivariate analysis of the smoking and pregnancy behavior variables. Twenty-six percent of respondents reported that they smoked cigarettes during their pregnancy and about 55% of all respondents stated they were former smokers. The mean number of cigarettes reportedly smoked daily was 11.9.

More than half (54%) of the respondents who did not finish high school were prenatal smokers compared to 29.7% of high school graduates and 14.6% of college educated women. Bivariate analysis also revealed that SES, source of prenatal care, and marital status were significantly associated with prenatal smoking. About 18% of the higher SES group were smokers compared to 50.4% of the lower SES strata ($P < .0001$).

Although African Americans had a higher prevalence rate than either Hispanics or whites, this finding was not significant. In fact, the results showed that race or ethnicity were not significantly associated with smoking. Thirty-two percent of black women stated they smoked cigarettes compared to equal proportions (25.5%) of Hispanic and white respondents ($P = .55$). However, after controlling for SES, the rates for blacks and whites were almost equal. For example, among higher SES women there were no appreciable differences between blacks (17.1%), whites (18.4%), or Hispanics (16.7%). Comparatively, among lower SES women, Hispanics had the lowest smoking prevalence (30.3%) followed by African Americans (54.2%), and whites (60%, $P < .05$). Respondents between the ages of 18-25 had only a slightly higher prevalence rate (29.8%) than those over 25 (24%). Also, the average age of nonsmokers (27.6) and smokers (26.7) did not differ appreciably or significantly. With regard to marital status, more than twice the proportion of nonmarried patients (41.6%) were smokers during pregnancy compared to 19.9% of married respondents ($P <$ .0001).

Table 2.—Logistic Regression Table
Dependent Variable
Smoking During Pregnancy (Yes/No)

Variables	**Odds Ratios**	**Confidence Intervals**
Low SES *v* high SES	3.7**	(2.1, 7.0)
Non-married *v* married	1.4	(0.7, 2.6)
Black *v* white	.6	(0.3, 1.3)
Hispanic *v* white	.3*	(0.2, 0.7)
Age <26 years *v* ≥26 years	.7	(0.4, 1.2)
Public clinic *v* nonpublic clinic	1.7	(0.9, 3.2)
Not trying to conceive *v* trying	1.5	(1.0, 2.5)

*=*P*<.01 **=*P*<.001

Table 3.—Logistic Regression Table
Dependent Variable
Number of Cigarettes Per Day (>10/≤10)

Variables	**Odds Ratios**	**Confidence Intervals**
Low SES *v* high SES	0.8	(0.3, 2.0)
Non-married *v* married	2.4	(0.9, 7.0)
Black *v* white	0.5	(0.1, 1.6)
Hispanic *v* white	0.3	(0.05, 1.4)
Age <26 years v ≥26 years	0.5	(0.2, 1.1)
Public clinic *v* nonpublic clinic	0.6	(0.2, 1.7)
Not trying to conceive *v* trying	1.6	(0.7, 3.7)

Women who received their prenatal care from a public clinic were significantly more likely to have been prenatal smokers than respondents who received care from a private source. Forty-one percent of public prenatal care recipients were smokers compared to approximately 19% of those who received prenatal care from a private source ($P < .0001$). Women who went for their first prenatal care visit during the first trimester were less likely to be prenatal smokers. Twenty-three percent of women who had their first prenatal care visit during the first trimester smoked during their pregnancy. The comparable figure for those who had an initial prenatal care visit during the second trimester was more than twice (48.3%, $P < .0001$) this proportion. Persons who smoked and went for prenatal care during the second trimester were slightly younger (mean age = 25.4) than smokers who went for prenatal care during the first trimester (mean age = 27).

The results also reveal that persons who were trying to get pregnant were significantly less likely to continue smoking after becoming aware of their pregnancy than those who were not attempting to conceive. About 18% of women who stated they were trying to conceive were smokers compared to 35% who reported they were not trying to get pregnant ($P < .0001$).

Age was positively associated with the number of cigarettes consumed ($P < .05$). More than half of smokers (55.6%) over 30 indicated they smoked more than 10 cigarettes daily compared to 34% of the 26 to 30 year- old cohort and 27.9% of those between ages 18 to 25. The over 30-year-old group smoked an average of 14.7 cigarettes a day compared to 11.4 for the 26 to 30 year-old respondents and 10.7 cigarettes for the 18 to 25 year-old group. Forty-one percent of white respondents reported smoking more than 10 cigarettes daily compared to 26% of African Americans and 15% of Hispanics. The average number of cigarettes smoked daily was not significantly or appreciably associated with either SES, race, or ethnicity.

Multivariate Analysis

Logistic regression analysis was conducted to obtain odds ratios after adjustment for the simultaneous effects of certain independent variables. The categorical dependent variables employed in this analysis are cigarette smoking after knowledge of pregnancy (Table 2) and number of cigarettes smoked (Table 3). The Statistical Analysis System (SAS) Logist procedure was used to perform the regression analysis.

After holding constant other variables in the model, (Table 2) the results reveal that SES is the most powerful predictor of smoking behavior during pregnancy. Persons who were on public assistance or who had less than a college education were 3.7 times more likely to have smoked cigarettes during their pregnancy than respondents who did not have either of these characteristics ($P < .001$). Ethnicity (ie, Hispanic respondents), also proved to be a significant predictor ($P < .01$) of smoking status in the multivariate model. The adjusted odds ratio indicates that Hispanics were 70% less likely than whites to have smoked cigarettes during pregnancy. Although the probability was slightly greater ($P = .08$) than the acceptable level of statistical significance ($P < .05$), persons who were trying to conceive were 50% less likely to have smoked before pregnancy than those who were not attempting to become pregnant. Also, as seen in the multivariate model, neither marital status, race (ie, black or African-American identity), age, nor source of prenatal care proved to be significant predictors of smoking during pregnancy.

Among respondents who were smokers, the model (Table 3) reveals that married persons were 2.4 times more likely ($P < .1$) than nonmarried individuals to have smoked more than 10 cigarettes daily during pregnancy. Similar to the bivariate analysis results, multivariate analysis revealed that the lower SES group, persons less than 25 years old, and blacks or Hispanics were less likely to have smoked more than 10 cigarettes a day. However, none of these variables were statistically significant predictors of the amount of cigarettes smoked daily. Also, as might be expected, our finding showed that women who smoked during pregnancy had a greater likelihood of using illegal substances or alcohol while pregnant than did nonsmokers.

Discussion

This paper presented results from one of the few citywide studies in Connecticut on the prevalence of smoking and other forms of substance abuse among perinatal women. Using the composite index of public assistance and education, the data showed that SES is the most powerful predictor of smoking during pregnancy. However, when the components of SES were analyzed separately, education proved to be a much stronger explanatory variable and may likely be the most important social class predictor of smoking and prenatal care behavior. Other studies also have identified a strong inverse association between education and smoking among pregnant women[14,15,20] as well as among the general population.[18,23] Parenthetically, having less education may reflect less knowledge or a disbelief about the dangers of smoking during pregnancy, a diminished health promotion and disease prevention orientation, targeted promotion by the cigarette industry, psychosocial barriers induced by stressful environmental factors, and also may result in reduced income and employment opportunities.

Bivariate findings also indicate that nonmarried women were more likely to be smokers than married women. After controlling for SES however, this finding held for pregnant women in the higher SES group but not for those included in the lower SES category. Almost twice the proportion of nonmarried higher SES women were smokers (29.1%) compared to married women (15.9%, $P = .02$) of the same SES group. For women who were in the lower SES group, our results demonstrated that the rates of smoking between nonmarried women (49.1%) and married women (52.5%,) were about the same.

Another example of the dominant effect of SES is evident in the logistic model where it is the strongest predictor of smoking status after adjusting for other variables. Pregnant women who had less than 12 years of education or were receiving public assistance were about four times more likely to have smoked cigarettes during pregnancy than those who did not meet these criteria. The unadjusted smoking rate (26%) among perinatal women in this study exceeded the national prevalence rate (19.1%) and those of some other studies examining the smoking behavior of women during pregnancy.[15] A higher (albeit not statistically significant) prenatal smoking prevalence rate existed among African-American women (32%). After controlling for SES however, the analysis showed that blacks of lower SES had a slightly reduced rate (54.1%) compared to whites (60%) and the smoking prevalence rate for Hispanics was about half the rate of either blacks or whites. As noted earlier, among the higher SES group there were virtually no differences between blacks, Hispanics, or whites. These findings appear consistent with a recent report from the Centers for Disease Control and Prevention (CDC) which showed that among women who had 11 or fewer years of education, African Americans had a lower smoking prevalence rate (36.2%) during pregnancy than whites (45.1%).[20] The CDC study also found that among those with 13 years or more of education, the prevalence rates of African Americans and whites were virtually identical.

Our multivariate analysis also showed that Hispanic women, who in this sample were predominately Puerto Rican, were 70% less likely than whites to have smoked during pregnancy. Few studies have examined the smoking prevalence of pregnant Puerto Rican women. Studies reporting the smoking prevalence of Hispanic women generally have shown that the rates vary by particular ethnic group, gender, and age. For example, Escobedo et al, in an analysis of the Hispanic Health and Nutrition Examination Survey (HHANES) found that Mexican Americans have the lowest age specific rates and that certain groups of Cuban Americans and Puerto Ricans (especially women) had greater rates than the general population.[31] Using the same data, Pletsch found that among Hispanic women of childbearing age (12 to 49 year-old), Puerto Ricans had an age adjusted prevalence rate (33.5%) which exceeded the rates of Cuban Americans (23.2%) and Mexican Americans (22.6%).[32] The rates ranged from a high of 42.4% in the 20 to 29 year-old cohort to 15.8% among those in 12 to 19 year-old category. This pattern suggests that ethnicity may be a stronger predictor of smoking status than race.

The concepts of race and ethnicity have been criticized because they are ambiguous and poorly measured in epidemiologic and health services research.[33,34] Race is often used as a measure of putative biologic or genetic differences, cultural patterns, socioeconomic status, racial discrimination, and sociopolitical power. On the other hand, ethnicity refers primarily to cultural factors such as customs, language, religious traditions, normative behavior, and acculturation. In the absence of any known or hypothesized biologic or genetic variations between black, white, or Hispanic pregnant women which may be responsible for different smoking patterns, race is conceived of as a social rather than a biologic explanatory variable.

With regard to measuring race or ethnicity in smoking research, indicators or proximal measures could include: cultural dynamics (eg, normative systems and sanctions against smoking, religious taboos); SES (eg, social stress induced by social deprivation or reduced opportunity); racism (eg, proliferation and promotion of cigarettes targeting black and Hispanic communities by the tobacco industry), and sociopolitical structures (eg, alliances between African-American community organizations and the tobacco industry).[35] Without greater specification and measurement of race and ethnicity as predictors of smoking during pregnancy, the meanings and interpretations of race and ethnic effects are diffuse and unclear.

With regard to the influence of race on childbirth, pregnancy is fundamentally a biological process as measured by clearly defined indicators of well-being such as birth weight. Smoking during pregnancy is a major cause of low birth weight, and thus differences in birth weight between blacks and whites are assumed to be at least partially correlated with their mothers' smoking status. However, the CDC report and other studies have shown that regardless of education, maternal age, marital status, parity, adequacy of care, and smoking status, African Americans have a much higher proportion of low birth weight infants than whites.[36,37] These findings suggest that there are other factors accounting for this which may be related to both biologic and social determinants. One of the challenges facing public health researchers is to develop more precise measures and methods that would provide better understanding of the sociological and biological factors accounting for racial differences in birth weight.

Another important finding of this study is that women who went for prenatal care during the first trimester were less likely to smoke. This result probably reflects different circumstances (eg, selection bias, access to care, smoking history, source of prenatal care, physician advice, parity) and orientations such as fear of adverse outcomes and infant health problems, and positive attitudes about the pregnancy.[15,38] Women are generally more concerned about their health during pregnancy; our results indicate that a higher percentage of women are less likely to smoke if they are intentionally attempting to become pregnant.

In examining the effect that differences in the source of prenatal care may have regarding the time at which smokers and nonsmokers present for prenatal care, additional analysis was conducted controlling for private *v* public care. Among public prenatal care recipients, but not for women who received private prenatal care, a greater proportion of smokers (38.5%) went for their initial prenatal care visit during the second trimester than nonsmokers (23.4%, $P < .05$). Moreover, only 4.8% of smokers who received private care had their first prenatal care visit during the second trimester. These findings suggest that access to care also reflects the importance of SES as a structural variable or barrier; even among smokers a much larger proportion of higher SES than lower SES women presented for prenatal care during the first trimester. Some studies have found that the physician-patient relationship is qualitatively different between patients receiving private care and public health care services.[39-41] In the case of pregnant women, private care physicians may have established a longer relationship with their patients; have seen them more often; spent more office time attending to them; and thus may have provided them with more or different forms of advice about smoking and other services related to their pregnancy.

The time of entry into the prenatal care system is also important because it may provide crucial opportunities to intervene at an early period and thereby reduce the effects of cigarette smoking.[42] Also, it appears that a substantial number of women will quit while attempting to conceive or after finding out they were pregnant.[15] In addition, Fingerhut et al reported that women who quit early in their pregnancy have a reduced chance of resuming smoking within a year of quitting than those who quit at later timepoints.[14]

The bivariate finding that older women and those who were married smoked a greater number of cigarettes than younger and nonmarried women has implications for medical care and intervention. Older women have greater risks related to pregnancy outcomes and have also been found to be least likely to quit during pregnancy.[21] Williamson et al also found that older women (35 to 45) smoked more cigarettes per day than did younger women.[43]

Despite these results and corroboration by other researchers, a certain amount of caution should be exercised with regard to this study. First, the relatively small number of blacks and Hispanics and the nonprobability selection of respondents may limit the generalizability of the results. Secondly, the accuracy of self-reported information in substance abuse research generally is another consideration requiring cautious inferential acceptance of these results. Also, as previously mentioned, it is likely that the study sample reflects self-selection bias.

Notwithstanding, the significance of these findings must be considered in light of the risks of physiological impairment from tobacco consumption during and after pregnancy, the social and health consequences which result, and the determination and capability of social and health institutions to address the problem both in terms of prevention and cessation.

From the perspective of intervention, a multidimensional approach is required which focuses on the individual, community, and structural aspects of the problem. It appears appropriate to begin or enhance tobacco education programs targeting prepubescent and adolescent females, since research indicates that smoking among women most often begins in adolescence.[44] Family intervention programs should be included as a necessary component of early intervention since there is also evidence indicating that smoking patterns may be a learned response from one's family environment. For example, Millar and Hunter suggest that the amount of cigarettes a person smokes, the brand, and even the intensity with which one smokes may be directly influenced by early household or parental smoking behavior.[45]

Although many women cease cigarette smoking during pregnancy, there is a tendency to resume smoking shortly thereafter.[14] This is a major problem because not only does smoking during pregnancy present a danger to the fetus, but smoking after pregnancy endangers the developing infant or child. Women need to be informed more widely of the extended danger of cigarette smoking (ie, second-hand smoke).

A major concern among smokers is weight gain after smoking cessation.[46,47] This concern may generate increased anxiety among pregnant smokers because they also may be worried about possible postpartum weight gain. Programs are needed, therefore, to enhance self-perception and self-confidence and emphasize the importance of nutritional balance in any weight maintenance regimen for nursing mothers.

On-site educational programs or informational material emphasizing the detriments of cigarette smoking are needed in public facilities (eg, schools, restrooms, health clinics and physician offices, and social service locations) frequented by pregnant and postpartum women. In addition, greater recognition of smoking as a public health hazard and as a form of substance abuse will also help to change institutional policies and community awareness regarding the problem. Also, programs and events promoted by tobacco companies which are advertently or inadvertently targeted toward women should undergo greater public scrutiny and debate. Finally, because smoking is strongly correlated with socioeconomic status, such as education and income, it is unlikely that the above cited patterns will change appreciably without improving fundamental structural problems.

Acknowledgements

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Clinical Prognosis Poor for Depressed Outpatient With a History of Heart Attacks

Sixty percent of depressed outpatients have at least one chronic medical condition, such as a heart condition, high blood pressure, or insulin-dependent diabetes. For those who have a history of heart attacks, episodes of depression may occur more often and symptoms may be worse, probably because of the limitations a heart condition usually places on daily living. Moreover, doctors may be more reluctant to treat their depression because of concerns about the cardiac side effects of antidepressant medication, according to a newly published study, which was supported in part by the Agency for Health Care Policy and Research (HS06802).

Kenneth B. Wells, M.D., M.P.H., and his colleagues examined the course of depression over two years for 626 outpatients with and without a history of hypertension, a history of heart attacks, or current insulin-dependent diabetes (IDD). They found that all depressed outpatients, both with and without a chronic medical condition, had many persistent depressive symptoms and episodes over two years. On average, the patients experienced symptoms of major depression or dysthymia, a prolonged but milder form of depression, every month and spent at least one-third of the year depressed.

Depression was worse in patients with a history of heart attacks, most of whom had experienced their most recent heart attack in the year before the study began. These patients were twice as likely as patients without a history of heart attacks (54.1% *v* 27.9%).

Hypertension and insulin-dependent diabetes were not associated with increased depressive symptoms or episodes. However, these disorders might affect functioning and worsen depression among inpatients, who usually have more severe hypertension and/or diabetes than outpatients, according to the researchers.

Details are in, "Course of depression in patients with hypertension, myocardial infarction, or insulin-dependent diabetes" by Dr. Wells, Williams Rogers, Ph.D., M. Audrey Burnam, Ph.D., and Patricia Camp, M.S. It appears in the April 1993 American Journal of Psychiatry 150(4), pp. 632-8.

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH AND ADDICTION SERVICES

OFFICE OF COMMISSIONER

NOTICE

TO: ALL HEALTH CARE PROVIDERS

FROM: Susan S. Addiss, MPH, MUrS
Commissioner
Department of Public Health and Addiction Services

Toni Richardson
Commissioner
Department of Mental Retardation

RE: **DO NOT RESUSCITATE ORDERS FOR CLIENTS OF THE DEPARTMENT OF MENTAL RETARDATION.**

The purpose of this notice is to inform you of your responsibility to take certain steps **prior to the entry of a Do Not Resuscitate Order for any client of the Department of Mental Retardation**. In summary, you must contact the Department of Mental Retardation casemanager assigned to the patient, or if unavailable, the Regional Director of Health Services of the Department of Mental Retardation in your area prior to the entry of a DNR order. Upon receipt of the notification that a DNR order is proposed for a Department of Mental Retardation client, a prompt review process will be initiated by the Department of Mental Retardation.

These requirements are established pursuant to the statutory authority of the Department of Mental Retardation for oversight of the medical care provided to its clients and pursuant to the order of the United States District Court for the District of Connecticut for all class members in the Connecticut Association For Retarded Citizens v. Thorne lawsuit.

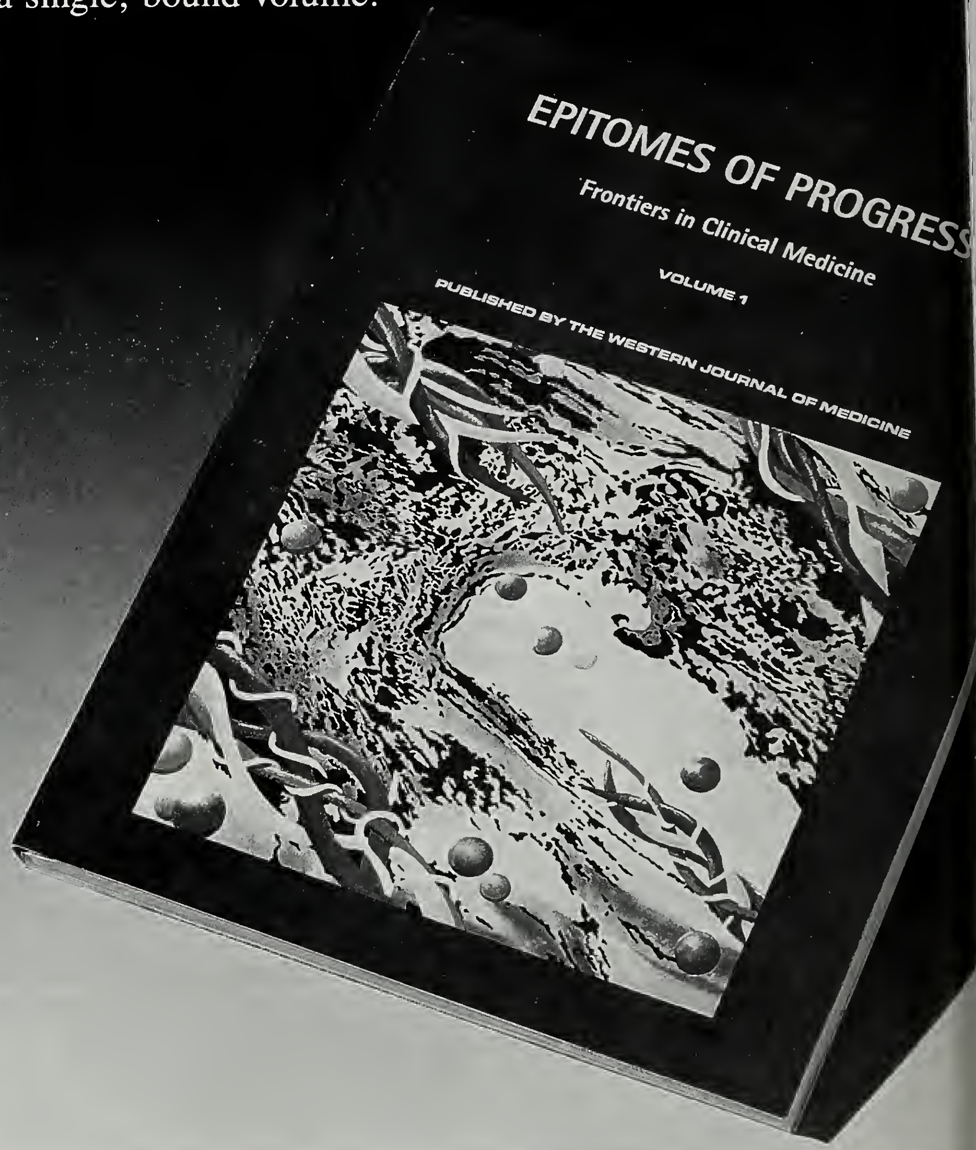
Recently, the General Assembly strengthened the oversight and monitoring responsibility of the Department of Mental Retardation over the provision of medical care of persons placed or treated under the direction of the Department. Under Public Act No. 93-303, the Commissioner of Mental Retardation is to review DNR orders to determine if the decision is a properly executed medical order to withhold cardiopulmonary resuscitation. The statute sets forth specific elements that define an acceptable DNR order for clients of the Department of Mental Retardation. These provisions are also reflected in the federal court order limiting the use of DNR orders on class members in the Connecticut Association For Retarded Citizens v. Thorne lawsuit.

The Commissioner of Mental Retardation has created a review process for DNR orders in accordance with these requirements. In addition, requirements for DNR orders are contained in DMR Medical Advisory 87-2. The advisory and review protocol are available from the Regional Director of Health Services of the Department of Mental Retardation in your area. They are also being mailed to all health care facility administrators in the State.

If you have questions regarding the implementation of these review procedures or DNR guidelines, please contact the Department of Mental Retardation Director of Community Medical Services at 203-725-3839 or the appropriate Department of Mental Retardation Regional Director of Health Services.

epitome

i-ʹpit-ə-mē\ *n* [L, fr. Gk *epitomē,* fr. *epitemnein* to cut short, fr. *epi-* + *temnein* to cut — more at TOME] (1520) **1 a** : a summary of a written work **b** : a brief presentation or statement of something **2** : a typical or ideal example: EMBODIMENT (the British monarchy itself is the ~ of tradition — Richard Joseph) **3** : Plural — *Epit-o-mes* — A regular FEATURE of *The Western Journal of Medicine*, now available in a single, bound volume.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Important Advances in Clinical Medicine

Neurology

The Council on Scientific Affairs of the California Medical Association presents the following inventory of items of progress in neurology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific act and important clinical significance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may, be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of these items of progress in neurology that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Neurology of the California Medical Association, and the summaries were prepared under its direction.

Dysequilibrium in Older People

FALLS in older people are a common source of morbidity and mortality. The risk of falls increases with age after 60 years, and it is greater in women than in men. Most falls in older people result from an accidental slip or trip, often associated with an unsteady gait. The cause of the dysequilibrium can often be traced to decreased sensory input, slowed motor responses, diminished postural reflexes, and weakened support. Sedating medications are a common contributing factor.

Considering the many possible loci of the dysfunction the examination of older patients complaining of dysequilibrium must include a careful assessment of gait, strength. coordination, reflexes, and sensory function. The broad-based ataxic gait caused by cerebellar disorders is usually readily distinguishable from the milder gait disorders associated with vestibular or somatosensory loss. Furthermore, other cerebellar signs usually accompany cerebellar ataxia. Bilateral vestibular loss may or may not be associated with bilateral hearing loss. A history of ototoxic drug exposure or episodic vertigo is helpful in making a diagnosis, but the only way to document vestibular loss is to do quantitative caloric or rotational testing.

The deterioration of gait that normally occurs with aging must be distinguished from that associated with lesions of the cortical and subcortical motor centers. The shuffling, flexed, steppage gait of Parkinson's disease is often coupled with associated signs, including bradykinesia, cogwheel rigidity, retropulsion, and the characteristic pill-rolling" tremor. Apraxia of gait, characterized by slow. halting, sliding steps, as if the patient's feet were adhering to the floor, is due to bilateral frontal lobe dysfunction. Common causes include multiple subcortical infarcts, infiltrating tumors, and communicating hydrocephalus. Modern neuroimaging studies readily distinguish these disorders from the nonspecific atrophy seen in patients with a senile gait.

With the exception of those caused by communicating hydrocephalus—which occasionally may be dramatically reversed after the placement of a shunt—inflammatory neuropathies responsive to steroid therapy, and sensory loss due to vitamin B_{12} deficiency, most gait disorders in older people are not reversible. Most patients can be helped by providing support with a cane or a walker, and many benefit from physical therapy with gait training. The use of tranquilizing medications should be scrupulously avoided, as they further impair the central integration of sensory information.

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Molecular Genetics in Neurologic Diseases

GREAT progress has recently been made in the understanding of the molecular genetics of neurologic disorders that will have a direct effect on the clinical practice of neurology. There are now specific chromosomal assignments for more than 150 diseases primarily affecting the nervous system. Only a few examples can be briefly described here. Mutations within specific genes have been discovered for Duchenne muscular dystrophy on the X chromosome, in the amyloid precursor protein gene on chromosome 21 in early-onset familial Alzheimer's disease, in the neurofibromatosis type I gene on the long arm of chromosome 17, and in an area on the short arm of chromosome 17 that includes a peripheral myelin protein gene related to the most common form of Charcot-Marie-Tooth hereditary neuropathy. Genetic linkage evidence has also demonstrated the existence of another, as yet unidentified, gene for early-onset familial Alzheimer's disease on chromosome 14. Other gene locations of interest include those of facioscapulohumeral muscular dystrophy on chromosome 4, infantile spinal muscular atrophy on chromosome 5, Friedreich's ataxia on chromosome 9, tuberous sclerosis on chromosome 16, and the prion protein on chromosome 20. Recently the gene for Huntington's disease on the short arm of chromosome 4 has been identified after a persistent ten-year search.

Several disorders have been associated with variable and unstable repeats of DNA triplets that may expand to great lengths. These expansions are related to unusual inheritance patterns, including the phenomenon of anticipation (the worsening of a clinical syndrome with each new generation). These disorders include myotonic muscular dystrophy, fragile X mental retardation, and Kennedy's X-linked bulbospinal muscular atrophy. A similar phenomenon has been noted in Huntington's disease.

Direct DNA diagnostic tests are commercially available for Duchenne type and myotonic muscular dystrophies and will soon be available for the most common form of type 1 Charcot-Marie-Tooth neuropathy with slow nerve-conduction velocities. Efforts are underway to make a direct DNA test available for Huntington's disease. Indirect DNA genetic linkage studies can be done for the presymptomatic diagnosis of those disorders in which closely linked markers have been identified (for example, Friedreich's ataxia and infantile spinal muscular atrophy). These indirect studies always have an error rate of 1% to 5% and require blood specimens from many family members.

Mitochondria have their own DNA separate from nuclear DNA and are specifically involved with the respiratory chain and oxidative phosphorylation. Mitochondrial DNA is inherited from the cytoplasm of dividing cells and not from the nucleus. Mutations of mitochondrial DNA have been discovered in a wide range of neurologic syndromes presenting as either sporadic cases or inherited conditions passed only through affected women (sperm does not contain mitochondrial DNA). These diseases include Kearns-Sayre progressive external ophthalmoplegia with retinopathy, Leber's hereditary optic neuropathy, myoclonic epilepsy with ragged red fibers, and mitochondrial encephalomyopathy with lactic acidosis and stroke. Screening tests using blood or muscle biopsy specimens for many of these mitochondrial diseases are also now commercially available.

Detailed and accurate counseling for all genetic disorders continues to be important. The patients and families must be educated about the risks of inheritance, the prognosis, and the variability of symptoms and complications. The accuracy and vagaries of the individual tests must be understood. Implications for employment, family planning, and insurance need to be assessed. Finally, the idea of identifying carriers of serious untreatable, progressive neurologic disorders decades before symptoms occur is a new concept for physicians and patients that will require continuing accommodation and assessment.

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Tritschler HJ, Medori R: Mitochondrial DNA alterations as a source of human disorders. *Neurology* 1993; 43:280-8.

Radiosurgical Treatment of Brain Lesions

THE association of stereotactic surgery with radiant energy to cause discrete lesions in the brain for the control of functional disorders and intractable pain led to the idea of radiosurgery. But the inability to confirm the radiosurgical target led to the procedure's falling into disuse for the surgical treatment of functional neurologic disorders. Its use was restricted to the treatment of arteriovenous malformations and pituitary tumors that could be precisely targeted using angiography and pneumoencephalography. Radiosurgical applications have expanded immensely since computed tomographic images and computer calculation of radiation distribution became available.

The modern definition of radiosurgery is that of a noninvasive technique in which image manipulation and high doses of radiant energy are used to destroy lesions in the brain with surgical precision. Two forms of radiant energy have been used, particulate (proton beam or helium beam) and electromagnetic (cobalt 60, linear accelerators). No significant radiobiologic difference has been established between these two forms. The natural decay of ^{60}Co produces the gamma rays used as a source of energy for the commercially available radiosurgical instrument known as the "gamma knife." Linear accelerators artificially produce a photon beam that can be precisely focused to a target using stereotactic techniques.

Radiosurgery is effective for the treatment of arteriovenous malformations 3 cm in diameter or smaller. Total arteriovenous malformation obliteration occurs in 80% of cases within two years. Larger arteriovenous malformations can be palliated with radiosurgery, with total obliteration in 50% of the cases. Radiosurgery can halt the growth of acoustic neuromas in more than 80% of the cases. It has been established as part of multimodality treatment for the effective control of solitary and multiple metastatic lesions to the brain, with a success rate of more than 80%.

The risks of radiosurgery are small and are related to radiation necrosis. Edema surrounding the treated lesions may cause transient neurologic deficits. Meticulous stereotactic technique and the judicious determination of the radiation dose are key factors in decreasing the complication rate.

Because radiosurgery is a new technology, it is still considered a secondary choice to the resection of lesions of the brain. But its proven effect, noninvasive nature, and cost-effectiveness—it is usually done on an outpatient basis—will make this technique more and more a part of the treatment of brain lesions.

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Ticlopidine Hydrochloride and Prevention of Stroke

TICLOPIDINE hydrochloride is a novel platelet antiaggregant agent now available in the United States as an alternative to aspirin for the secondary prevention of stroke. Unlike aspirin, ticlopidine and other thienopyridine compounds have no effect on cyclooxygenase. Specific mechanisms of action remain under investigation, but likely involve the inhibition of adenosine diphosphate signal transduction at the platelet membrane. Ticlopidine provides greater efficacy than aspirin, but at the expense of more substantial adverse effects.

The Ticlopidine Aspirin Stroke Study directly compared these agents in subjects with recent transient ischemic stroke or mild ischemic stroke (cerebral or retinal) and found a 21% relative risk reduction in stroke (intention-to-treat analysis) with ticlopidine, 250 mg twice a day, versus aspirin, 650 mg twice a day. Benefits of ticlopidine use were shown in both sexes, with a three-year relative risk reduction in stroke of 27% for women and 19% for men. Notably, the advantage of ticlopidine use was greatest during the initial year: stroke recurrence was nearly halved compared with aspirin treatment.

Meta-analysis of all placebo-controlled aspirin trials before 1988 provides an estimated stroke risk reduction of 22% in subjects with a previous transient ischemic attack or minor stroke. These protective effects of aspirin can probably be generalized to women and to persons who have had a substantial stroke. The evidence for its efficacy in women is not extensive, however, and no large trials have evaluated the use of aspirin for preventing secondary stroke exclusively following a completed stroke. The Canadian American Ticlopidine Study, a placebo-controlled trial in subjects with recent thromboembolic stroke, showed a 33.5% stroke risk reduction during the first year in women and men receiving ticlopidine. Efficacy analysis also revealed a 30.2% risk reduction with ticlopidine use for combined stroke, myocardial infarct, and vascular death.

Most side effects of ticlopidine use—diarrhea, dyspepsia, rash—are minor, but lead to medication cessation in about one of five subjects. Serum cholesterol levels may increase slightly, but this occurs in patients with a reduced incidence of stroke, myocardial infarct, and vascular death. Although bleeding time is prolonged, serious hemorrhage is uncommon and gastrointestinal bleeding less common than with 1,300 mg per day of aspirin. The major adverse effect of ticlopidine use is a severe, reversible neutropenia (less than 450 x 10^3 neutrophils per liter) occurring in nearly 1% of patients, with onset virtually always during the first three months of therapy. Complete blood counts must be obtained every two weeks during the first three months of treatment. In the Ticlopidine

Aspirin Stroke Study, the incidence of serious adverse effects did not differ between groups. Nevertheless, only reliable persons who understand the risks of ticlopidine should be considered treatment candidates.

The benefits of ticlopidine therapy are greatest for the first year after a transient ischemic attack or stroke, when the risk of recurrent stroke is highest. The use of ticlopidine should be considered on an individual basis in women and men at high risk for noncardioembolic ischemic stroke, especially those with a recent transient ischemic attack or completed stroke. In addition, ticlopidine use is indicated in persons who are intolerant to aspirin or who have recurrence of cerebral ischemia while on aspirin prophylaxis.

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Magnetic Resonance Spectroscopy

MAGNETIC resonance spectroscopy (MRS), a noninvasive method to measure metabolites in brain tissues, has been used to study the abnormalities of stroke, multiple sclerosis, dementia, and encephalopathy.

The basis of nuclear magnetic resonance spectroscopy is that certain atomic nuclei have weak magnetic moments that align in the direction of a strong magnetic field. These nuclei can be manipulated in the magnet to yield information about their anatomical position or biochemical structure. Hydrogen protons in water have resonance properties that allow them to form images in magnetic resonance imaging (MRI). Hydrogen 1 and phosphorus 31 are the two major nuclei with magnetic moments that have been used in MRS studies of people. Magnetic resonance spectroscopy using ^{1}H is done with suppression of the large signal from water molecules (about 55 mol per liter) so that the protons in other molecules that are present in lower concentrations (I mmol per liter or more) can be detected. Using ^{31}P, MRS allows the detection of phosphorus in adenosine triphosphate (ATP), phosphocreatine, and membrane phospholipids. It has been used to measure energy substrates, ATP and phosphocreatine, and pH in muscle diseases. One of the first applications of MRS to a human disease, McArdle's disease, a muscle disorder with a metabolic defect in glycogen metabolism, failed to show a normal fall in pH due to lactate accumulation during exercise. Subsequent studies with ^{31}P-MRS have shown abnormalities in pH and metabolites in a number of muscle disorders.

The first application of MRS to the study of brain tissue in humans was also done with ^{31}P-MRS. Infants with anoxic encephalopathy were shown to have decreased energy substrates, which correlated with the extent of injury. Studies in patients with stroke have shown an initial acidosis due to the build-up of lactate and other proton donors in the ischemic tissue. After several days, however, there is tissue alkalosis. This flip-flop of acidosis to alkalosis has been recorded with ^{31}P-MRS and the degree of alkalosis shown to relate to the severity of the infarct. Energy substrates are depleted in the infarcted tissue, but the loss of ATP is a late event, indicating irreversible death of the cells.

Proton MRS has shown early biochemical changes in infarcted brain tissue. The proton spectrum has a large peak from *N*-acetylaspartate, which is mainly found in neurons. The *N*-acetylaspartate signal is preserved early in infarction. It then begins to fall, suggesting that there is a window when cells remain viable and amenable to treatment. Lactate appears in the ^{1}H-MRS spectrum during the acute phase of an infarct.

Other diseases have begun to be studied with MRS. In Alzheimer's disease, a defect in membrane phospholipids has been shown by ^{31}P-MRS. Multiple sclerosis plaques have been shown by ^{1}H-MRS to have a loss of *N*-acetylaspartate in the chronic stage and an increase in lipid signals and choline in the acute stage. Hepatic encephalopathy produces changes in ^{1}H-MRS spectra in the glutamine or glutamate region. Epileptogenic foci have been localized with ^{31}P-MRS.

Magnetic resonance spectroscopy can be done as part of a routine MRI on commercially available MRI instruments in less than an hour. Although it provides unique biochemical information on brain metabolites and is useful in assessing the extent of tissue injury, further studies will be needed to determine its role in diagnosing and planning treatment in neurologic diseases.

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Outcomes Research—Possible Effects on Clinical Practice

OVER the past two decades, there has been a great expansion in neuroscientific knowledge and techniques that are expected to improve the health of patients with neurologic disease. This research has focused on the molecular basis of disease and is expected to result in new therapies, such as transplantation, growth factors, and gene therapies. Expectations are high for the eventual incorporation of the fruits of this research into the clinical practice of neurology.

Along with these advances, growing concern about escalating health care costs has stimulated research into how to identify health care practices that are most cost-effective yet most efficient. Although randomized controlled trials provide the most rigorous data on efficacy—benefit under the best possible circumstances—evidence of efficacy does not necessarily mean that a procedure or treatment will be effective outside the trial setting. The high cost and time requirements of randomized controlled trials also prevent using them for evaluating a large number of treatments or procedures. Finally, results of these trials may not be generalizable to many patients because of exclusion criteria for the trials.

A proposed method for addressing this problem is "outcomes research," so called because of its emphasis on measuring clinically relevant health outcomes. These include not only disease symptoms and mortality, but also daily functioning and activities, emotional well-being, and other dimensions of health-related quality of life. Other features of outcomes research are the use of observational studies, that is, data collected from nonexperimental studies, with careful adjustment for case mix and other possible confounding variables; the use of relatively large data bases (some have advocated that all patient visits be entered into a data base to evaluate outcomes); the use of quantitative techniques to analyze the existing medical literature; and the incorporation of patient preferences for different health outcomes in making clinical decisions. To date, two large-scale federally funded outcome studies have been undertaken to evaluate neurologically relevant conditions: low back pain and stroke prevention. A smaller outcome study of epilepsy surgery and an effort to develop clinical guidelines for rehabilitation after stroke using quantitative literature review and expert panel consensus are also in progress.

What are the mechanisms by which this growth in outcomes research may affect the clinical practice of neurology (and other specialties)? The first is by educating practicing physicians. This can be accomplished through the journal publication of meta-analyses and other outcome study results, continuing medical education courses, and developing and distributing clinical "guidelines" to practitioners (an ongoing venture of the Quality Standards Subcommittee of the American Academy of Neurology, the federal government's Agency for Health Care Policy and Research, and other organizations).

A second approach is through formal medical education. Much greater emphasis could be given to educating students and residents to treat patients using "evidence-based medicine"—that based on the quantitative evaluation of the results of published studies. At least one effort to implement this approach is underway at a Canadian medical school.

The third mechanism is by government changes in health policy. This may occur through changes in Medicare or Medicaid reimbursement policies. For example, payers might decide to link reimbursement for an electroencephalogram to clinical situations in which outcomes research indicates a possible health benefit from the test. As a second example, some outcomes research has shown that changing the informed consent process to facilitate patient participation in decision making can result in a different pattern of patient decisions about treatment. Such changes in the decision-making process could be made mandatory, particularly for long-term conditions in which alternative therapies differ negligibly in how they affect disease progression yet have different effects on health-related quality of life.

Finally, the current health care delivery system and the technologies that it uses could be revised by the results of outcomes research. Certainly in the ongoing efforts toward containing costs, any new diagnostic technology or therapy will be scrutinized more closely and will probably be subjected to more regulation than in the past, with the requirement that its cost-effectiveness be documented before its widespread use.

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On Losing One's Parents

KEN FLEGEL, M.D.

MY parents are both dead. The fact is neither remarkable nor unique. However, they died within 45 days of one another last winter—uncommon enough to bring me and my family up hard against reality. On the northern tip of Vancouver Island I woke in the dark the morning after the second funeral, my body on Eastern time, my spirit numb. I made my way back to the village cemetery to say my own private farewell. Douglas firs were silhouetted against the first light of dawn. Colorful funeral flowers had frozen into whited everlastings. I wept into the hoar frost on the new sod and wondered what had become of these lives that had created me. I could not have guessed at the many ways that an answer was to come during the next year.

The first hint came from my children. They could feel my depression the first week I returned and, in addition, had their own sorting out to do. Grandma and Grandpa would never visit again. And if grandparents die, what about parents? "What about you?" they asked. My wife and I answered as clearly as we knew how, reassuring them of our evident good health. That said, confronting mortality became too awesome for them. It was time for the weekly ice-skating outing. I should have understood then, but I couldn't—not yet.

My wife knew, having already been through my experience with her own parents, but she was too wise to say. Instead, she turned my wandering attention to the work needed on our hundred-year-old house and on the garden. The renovations went ahead in good time, but her message was too well coded for me to read.

My first step in understanding came on a camping trip to see the whales on the north shore of the St. Lawrence River. It was July, when the St. Lawrence estuary teems with life. I began to ruminate about the many camping holidays and fishing trips my parents took us on as children. We had had a sensational day spotting the great humpbacks and hearing the visceral sound of their blowing as they surfaced. As I prepared supper, I left the campstove to get some water from the stream. A voice that could only be my mothers's made a casual, but not quite distinguishable, comment behind me. I turned to see what she was saying from her accustomed surveillance post at the frying pan. The cruel emptiness hit me again. The next evening the weather became changeable. After supper, I walked away from the campfire's light, gave my nose a satisfying blow, hiked up my baggy trousers, and searched the western sky for clues about the next day's weather. In a flash, I realized I had just recapitulated one of my father's daily rituals. It seemed so suited to me.

Later in the summer, I rediscovered my mother's satisfaction in picking wild berries. Under the shade of poplar trees, I kept my eyes and hands busy collecting the evening treat for my family. In this solitude I began to feel a part of the long tradition of foraging and gathering that had characterized my wandering family.

Autumn came. I screwed up the courage to take out a sweater of my Dad's and try it on. I discovered I was putting on something more than a sweater. I wore his aura. In some manner, I became my father.

A neglected memory surfaced, revealing my next step in understanding. Seventeen years ago my wife and I worked in what was then Biafra. The people in the neighboring village buried dead relatives under the floors of the family huts. They erected pink statues of their dead parents in the front yard, a reminder of the life that was. We were living in a culture that was conscious of those who have died, of those who live still, and of those yet to be born; all were part of the psychic here-and-now reality. At that time, our aggressively individuated, Western minds found it merely curious.

Now, I am no longer perplexed by this idea. My parents live on in me. I know what they are thinking. Their life force was passed on to their children. I am one of its custodians; slowly, daily, inexorably, I pass it in turn to my children.

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Violence-Related Attitudes and Behaviors of High School Students—New York City, 1992

CENTERS FOR DISEASE CONTROL, ATLANTA

HOMICIDE is the leading cause of death among New York City (NYC) youth aged 15-19 years[1] and the second leading cause of death among this age group nationally.[2] During the 1980s, the rate of firearm-related homicide increased more rapidly among this age group than did any other cause of death.[2] The 1991 national school-based Youth Risk Behavior Survey indicated that 26% of students in grades nine to 12 reported carrying a weapon at least once during the 30 days preceding the survey.[3] To more effectively target violence-prevention programs for youth in NYC, in 1992 the NYC Department of Health (NYCDOH), the NYC Public Schools (NYCPS), and CDC conducted a survey of violence-related attitudes and behaviors among a representative sample of NYC public high school students. This report summarizes the results of the survey.

A self-administered questionnaire was given to a representative sample of ninth to 12th grade students in the NYCPS during June 1992. The sampling frame included all academic, vocational, and alternative NYC public high schools stratified by presence (n=19) or absence (n=96) of a school-based metal detector program. Schools in the metal detector program were visited approximately weekly by a team of security officers with hand-held metal detectors who scanned randomly selected students as they entered the building. Self-reported data were collected from 100% (n=15, three with and 12 without metal detectors) of sampled schools and 67% (n=1,399) of sampled students.

During the 1991-92 school year, 36.1% of all ninth to 12th grade NYC public school students surveyed reported being threatened with physical harm, and 24.7% were involved in a physical fight anywhere (including home, school, and neighborhood) (Table 1). Overall, 21% of students reported carrying a weapon such as a gun, knife, or club anywhere one or more days during the 30 days preceding the survey; 16.1% of students reported carrying a knife or razor; and 7.0% reported carrying a handgun. In comparison, rates for violent and potentially dangerous behaviors were substantially lower inside the school building (being threatened, 14.4%; carrying a weapon, 12.5%; carrying a knife or razor, 10.0%; being involved in a physical fight, 7.7%; and carrying a handgun, 3.7%) and when going to or from school.

Students who attended schools with metal detector programs (18% of students) were as likely as those who attended schools without metal detector programs to have carried a weapon anywhere (21.6% *v* 21.2%) but were less likely to have carried a weapon inside the school building (7.8% *v* 13.6%) or going to and from school (7.7% *v* 15.2%) (Table 2). The decrease in school-related weapon-carrying reflected reductions in the carrying of both knives and handguns. Presence of school-based metal detector programs had no apparent effect on the prevalence of threats and physical fights in any location.

Compared with all ninth to 12th grade students, students who were involved in a physical fight in school during the 1991-92 school year were less likely to believe that apologizing (38.1% *v* 19.0%) and avoiding or walking away from someone who wants to fight (55.5% *v* 35.5%) were effective ways to avoid a physical fight, and they were more likely to believe their families would want them to hit back if someone hit them first (56.9% *v* 77.9%) (Table 3). Compared with all ninth to 12th grade students, students who carried a weapon inside the school building during the 30 days preceding the survey were more likely to believe that threatening to use a weapon (21.4% *v* 43.9%) and carrying a weapon (19.9% *v* 47.9%) were effective ways to avoid a physical fight; were more likely

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TABLE 1.—Percentage of high school students who were threatened, involved in a physical fight, and/or carried weapons going to or from school, inside the school building, or anywhere—New York City, 1992

	To/From school		Inside school		Anywhere	
Behavior	**%**	**(95% CI*)**	**%**	**(95% CI)**	**%**	**(95% CI)**
Threatened†	15.7	(13.1-18.4)	14.4	(10.8-18.0)	36.1	(30.8-41.4)
Involved in a physical fight†	9.2	(6.3-12.1)	7.7	(5.0-10.4)	24.7	(21.5-28.0)
Carried a weapon§	13.9	(11.0-16.8)	12.5	(9.6-15.5)	21.3	(17.8-24.7)
Knife or razor	10.6	(8.0-13.1)	10.0	(7.7-12.3)	16.1	(13.4-18.9)
Handgun	4.1	(3.4- 4.8)	3.7	(3.1- 4.3)	7.0	(5.0- 8.9)

*Confidence interval.
†At least once during the 1991-92 school year.
§On ≥1 day during the 30 days preceding the survey.

to believe their families would want them to defend themselves from attack even if it meant using a weapon (43.6% *v* 67.5%); and were more likely to feel safer during a physical fight if they had a knife (29.6% *v* 64.2%) or a handgun (26.5% *v* 60.5%).

Reported by: C Ginsberg, New York City Department of Health; L. Loffredo, New York City Public Schools. Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion; Division of Violence Prevention, National Center for Injury Prevention and Control, CDC.

Editorial Note: The findings in this report indicate that violent behaviors and weapon-carrying among youth are substantial problems in both school and community settings. The rates for physical fighting and weapon-carrying among NYC public high school students reported here are consistent with national surveys.[3,4] The national health objectives for the year 2000 target reductions in homicide rates (objective 7.1), assaultive injuries (objective 7.6), physical fighting (objective 7.9), and weapon-carrying (objective 7.10) among adolescents and for increasing violence-prevention education and intervention programs in schools (objective 7.16) and communities (objective 7.17).[5] In addition, National Education Goal 6 for the year 2000 is for all schools to be free of drugs and violence and to offer a disciplined environment conducive to learning.[6]

This survey of NYC public high school students suggests that violent behaviors reflect the personal attitudes of students and the attitudes students attribute to their families. Reducing the occurrence of violence in schools will require the coordination of school-based violence-prevention programs with community-based organizations, parent groups, teachers, and state and local health and other agencies that serve youth.[7] In addition to school-based violence-prevention programs for youth, parents must be taught information and skills to modify the social values, attitudes, and behaviors that foster youth violence in any setting. Violence-related attitudes, behaviors, and injuries should be monitored to guide and evaluate policy and prevention programs.

Approximately one fourth of large urban school districts in the United States use metal detectors to help reduce weapon-carrying in schools (National School Safety Center, unpublished data, 1991). The findings in NYC suggest that school-based metal detector programs may help reduce, but not eliminate, weapon-carrying in schools and to and from schools. It is unknown whether these programs reduced the incidence of violence-related injury and death in NYC schools and whether respondents from schools with metal detector programs may have been less likely to report weapon-carrying. Metal detector programs alone cannot end youth violence—among NYC public school students, these programs did not reduce nonschool-related weapon-carrying or threats and physical fights in any location. These findings underscore the need for rigorous evaluations of school-based metal detector programs to establish the strengths and limitations of this intervention.

NYCDOH, in collaboration with the NYCPS, other local agencies, parents, and community groups has instituted the "Safe Routes to School/Safe Havens" program in one neighborhood to reduce violence and pedestrian injuries going to and from school. NYCDOH also is piloting a violence-prevention program in collaboration

TABLE 2.—Prevalence among high school students of being threatened, involved in a physical fight, and carrying weapons to or from school, inside the school building, or anywhere, by presence or absence of a school-based metal detector program—New York City, 1992

	Metal detector program (n=243)		No metal detector program (n=1156)	
Behavior	**%**	**(95% CI*)**	**%**	**(95% CI)**
Threatened†				
Anywhere	35.7	(20.5-50.9)	36.2	(30.7-41.7)
To/From school	15.8	(10.9-20.6)	15.7	(12.7-18.7)
Inside school	15.3	(8.5-22.1)	14.2	(10.0-18.4)
Involved in a physical fight†				
Anywhere	26.2	(14.4-38.0)	24.4	(21.5-27.3)
To/From school	9.4	(6.4-12.3)	9.1	(5.6-12.6)
Inside school	7.5	(0.4-14.5)	7.8	(4.9-10.7)
Carried a weapon§				
Anywhere	21.6	(15.3-28.0)	21.2	(17.3-25.1)
To/From school	7.7	(5.6- 9.9)	15.2	(11.7-18.8)
Inside school	7.8	(6.5- 9.1)	13.6	(10.0-17.2)
Carried a knife/razor§				
Anywhere	14.1	(6.5-21.6)	16.6	(13.7-19.5)
To/From school	6.3	(3.4- 9.2)	11.5	(8.4-14.5)
Inside school	5.0	(2.8- 7.3)	11.1	(8.3-13.8)
Carried a handgun§				
Anywhere	7.3	(0.1-14.5)	6.9	(5.2- 8.6)
To/From school	1.9	(0.0- 3.9)	4.6	(3.8- 5.4)
Inside school	2.1	(1.1- 3.2)	4.0	(3.3- 4.7)

*Confidence interval.
†At least once during the 1991-92 school year.
§On ≥1 day during the 30 days preceding the survey.

with community-based youth programs. In 1992, the NYCPS instituted peer mediation centers and conflict resolution/negotiation curricula for high school students and is working to implement or expand developmentally appropriate skills-based violence-prevention education for students in kindergarten through 12th grade. Public health, education, justice, and other agencies must combine their efforts to reduce violence among youth.

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TABLE 3.—Violence-related attitudes of high school students who were involved in a physical fight in school during the 1991-92 school year or who carried a weapon in school during the 30 days preceding ehe survey—New York City, 1992

	Students involved in a physical fight in school (n=95)		**Students who carried a weapon in school (n=154)**		**Total student population (n=1399)**	
Violence-related attitudes	**%**	**(95% CI*)**	**%**	**(95% CI)**	**%**	**(95% CI)**
Effective ways to avoid a physical fight						
Threaten weapon use†	36.2	(20.2-52.1)	43.9	(31.3-56.6)	21.4	(17.8-25.1)
Carry a weapon§	35.1	(21.5-48.7)	47.9	(41.2-54.5)	19.9	(17.5-22.3)
Avoid/Walk away¶	35.5	(27.4-43.6)	43.8	(34.8-52.9)	55.5	(52.2-58.7)
Apologize**	19.0	(8.1-30.0)	24.5	(16.7-32.2)	38.1	(35.0-41.2)
Family supports fighting and weapon use in self defense						
Fighting††	77.9	(71.0-84.7)	76.7	(68.9-84.5)	56.9	(47.3-66.5)
Weapon use§§	54.8	(44.4-65.3)	67.5	(55.1-79.9)	43.6	(36.6-50.5)
Feel safer with a weapon during a physical fight						
Knife¶¶	48.9	(33.4-64.4)	64.2	(55.0-73.4)	29.6	(25.8-33.3)
Handgun***	50.7	(39.4-62.1)	60.5	(50.9-70.2)	26.5	(24.2-28.9)

* Confidence interval.

† Answered yes to "Threatening to use a weapon is an effective way to avoid a physical fight."

§ Answered yes to "Carrying a weapon is an effective way to avoid a physical fight."

¶ Answered yes to "Avoiding or walking away from someone who wants to fight you is an effective way to avoid a physical fight."

** Answered yes to "Apologizing (saying you're sorry) is an effective way to avoid a physical fight."

†† Answered yes to "If someone hit me first, my family would want me to hit them back."

§§ Answered yes to "If someone attacked me, my family would want me to defend myself, even if it meant using a weapon."

¶¶ Answered yes to "If I was going to be in a physical fight, I'd feel safer if I had a knife."

***Answered yes to "If I was going to be in a physical fight, I'd feel safer if I had a handgun."

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DRUG INFORMATION UPDATE: HARTFORD HOSPITAL

Sumatriptan: A Novel Therapy for the Management of Acute Migraine

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Introduction

Migraine is a term that is used to describe a periodic unilateral, pulsating, severe or moderately severe headache associated with anorexia, nausea, vomiting, phonophobia, and photophobia. A common neurological disorder, it has been estimated that migraine affects approximately 9% and 16% of men and women respectively.[1] Historically, treatment of migraine has focused on acute symptomatic relief through the use of analgesics with or without antiemetics and ergot-containing preparations. Variably effective, the use of these preparations has been limited by the need for rapid administration after migraine onset and troublesome side effect profiles. Recently, a new agent, sumatriptan (Imitrex®, Glaxo) was introduced which appears to be extremely effective in aborting migraine attacks and is associated with a relatively mild side-effect profile when compared to other antimigraine agents.

Pathophysiology of Migraine

Studies examining the pathophysiology of migraine have yet to yield a universally accepted explanation for their occurrence, however, it is generally believed that the symptoms associated with migraine are the result of changes in cerebral blood flow. One popular belief associates migraine onset with serotonin (5-HT) depletion and subsequent cerebral vasodilation.[2,3] Serotonin is a neurotransmitter present in high concentrations in the gastrointestinal tract, brain, and platelets. Presently, three main divisions of 5-HT receptors have been identified: 5-HT$_1$, 5-HT$_2$, and 5-HT$_3$. Subsequent studies have identified several subsets of 5-HT$_1$-like receptors, of which the 5-HT^{1D} group appears to be the most prevalent in the human brain.[4]

Mechanism of Action

Sumatriptan, is a serotonin-like agent with selective activity for 5-HT$_1$ receptors. Although possessing some activity at 5-HT$_{1A}$ receptors, sumatriptan is approximately five times more potent at 5-HT$_{1D}$ receptors.[5,6] 5-HT$_{1D}$ receptors, which are found throughout the human body, are the most common subtype of serotonin receptors found in the brain. In animal models, administration of sumatriptan has been shown to decrease carotid blood flow through selective activation of 5-HT$_{1D}$ receptors. Additionally, a corresponding increase in carotid arterial vascular resistance has been noted, however, diastolic blood pressure was apparently not affected.[7] It has also been postulated that through its vasoconstrictive effects, sumatriptan may block protein extravasation from inflamed vessels and thus reduce pain.[8] This selective increase in carotid resistance is in contrast to the wide spread effects on vascular resistance seen with ergotamine.

Pharmacokinetics

Presently, sumatriptan is available in the United States only as a solution for subcutaneous injection. When administered via this route, a 6 mg dose of sumatriptan achieves a maximal serum concentration (C$_{max}$) of approximately 75 ng/mL and the bioavailability approaches 100%.[9] Time to C$_{max}$ is rapid following subcutaneous administration (five to 20 minutes). Sumatriptan undergoes extensive hepatic metabolism and forms two primary inactive metabolites (indoleacetic acid and glucu-

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Table 1.—Percent of patients experiencing relief of pain*

	Time (minutes) 30	60	120
Placebo (n=105)	18%	25%	38%
Sumatriptan 6 mg (n=422)	50%	71%	75%**
Sumatriptan 8 mg (n=109)	55%	78%	82%

*Actual percentages not given in article, values were read from graph.
**Value is for sumatriptan 6 mg plus placebo. The percent of patients with relief of pain who were given sumtriptan followed by another 6mg dose was 81%.

ronide analogues), both of which, along with the parent compound are primarily renally eliminated. Renal clearance of sumatriptan appears to be augmented by renal tubular secretion. The terminal half-life of sumatriptan is reported as being approximately two hours, however, following a single dose, an additional terminal phase of 12 to 16 hours has been observed.[10]

Clinical Trials

In a randomized, double-blind, placebo-controlled, parallel-group trial, the effect of subcutaneous sumatriptan was evaluated in 639 patients with migraine.[11] Patients were randomized to one of three treatment groups: sumatriptan 6mg, sumatriptan 8 mg, or placebo. Effect on migraine-associated pain was assessed at 30, 60, and 120 minutes after drug administration. Upon evaluation at 60 minutes, if patients were not pain free, those who had initially received placebo or 8mg of sumatriptan were given placebo and those given 6 mg were given either placebo or an additional 6 mg of sumatriptan. Alleviation of migraine pain was significantly better in the sumatriptan-treated groups as compared to placebo. The percent of patients experiencing pain relief at the various time points is given in Table 1. No significant differences in pain relief were noted among the sumatriptan-treated patient groups. The frequency at which adverse effects were reported in the sumatriptan-treated patients was quite high, approximately 50%. However, adverse effects were reported to be mild, short-lived, and resolved spontaneously. The most common adverse reactions associated with sumatriptan injection were pain at injection site, warm or hot sensation, and feeling of heaviness. No changes in blood pressure or heart rate were observed in the sumatriptan-treated patients. Initial pain response with sumatriptan was good, however, it was noted upon 24-hour follow-up that approximately 40% of the sumatriptan-treated patients had a recurrence of their migraine pain compared with only 15% of placebo-treated patients.

In a similar study, Cady et al, randomly assigned 1,104 migraine patients to receive either placebo (n=370) or 6mg of sumatriptan (n=734).[12] Severity of migraine pain was then assessed at 10, 20, 30, 40, 50, 60, 90, and 120 minutes. If pain was still present at 60 minutes, patients who had initially received sumatriptan were randomized to receive either an additional 6mg dose of sumatriptan or placebo and those who initially received placebo were again given placebo. Upon analysis, the authors found that pain relief was significantly greater at all time points for sumatriptan-treated patients as compared to placebo. At the one hour assessment, 70% of sumatriptan-treated patients experienced improvement in pain compared with 22% of placebo-treated patients. Improvement of migraine-associated symptoms (eg, nausea, vomiting, photophobia) was also greater in the sumatriptan-treated group. When pain relief for patients who had received one and two doses of sumatriptan was compared, no significant difference was noted. Drug-related adverse events were reported to be 85% for sumatriptan-treated patients and 53% for placebo-treated patients. Commonly reported adverse reactions included flushing, nausea, vomiting, pain at injection site, feeling of heaviness, feeling of tightness, dizziness, burning sensation, and tingling.

Indications

Sumatriptan has been approved for use in the acute treatment of migraine attacks with or without aura. It is not to be used for the management of hemiplegic or basilar migraine. Unlike ergotamine and other agents traditionally used in the treatment of migraines, sumatriptan appears to be effective in providing pain relief regardless of the time elapsed between the onset of migraine and the administration of medication. This appears to be a major advantage in favor of sumatriptan.

Adverse Effects

Although the rate of reported side effects associated with the use of sumatriptan is high, these side effects are largely mild and transient. The most common side effects reported with the use of subcutaneous sumatriptan include pain at the injection site, tingling, feeling of warmth, feeling of heaviness, flushing, dizziness, weakness, and chest discomfort. However, due to the mild and transient nature of the adverse reactions, sumatriptan does appear to be well tolerated by patients. Unlike ergotamine, subcutaneously administered sumatriptan has not been associated with increases in total peripheral resistance or diastolic blood pressure.

Contraindications

Sumatriptan, because of its potential to cause coronary vasospasm, should not be given intravenously. Similarly, sumatriptan should not be administered to patients with a history of ischemic heart disease or Prinzmetal's angina. Patients with uncontrolled hypertension also should not receive sumatriptan due to the potential of sumatriptan to cause increases in blood pressure. Finally, sumatriptan should not be given to patients receiving ergotamine-containing preparations due to possible additive effects on blood pressure elevation.

Dosage and Administration

Sumatriptan is available as 6mg unit-of-use syringes or single dose vials. The recommended dose of sumatriptan is 6mg administered subcutaneously at the onset of migraine symptoms. An additional 6mg dose may be given one hour after the initial dose if symptoms persist. The maximum recommended dose is 12 mg during a 24-hour period.

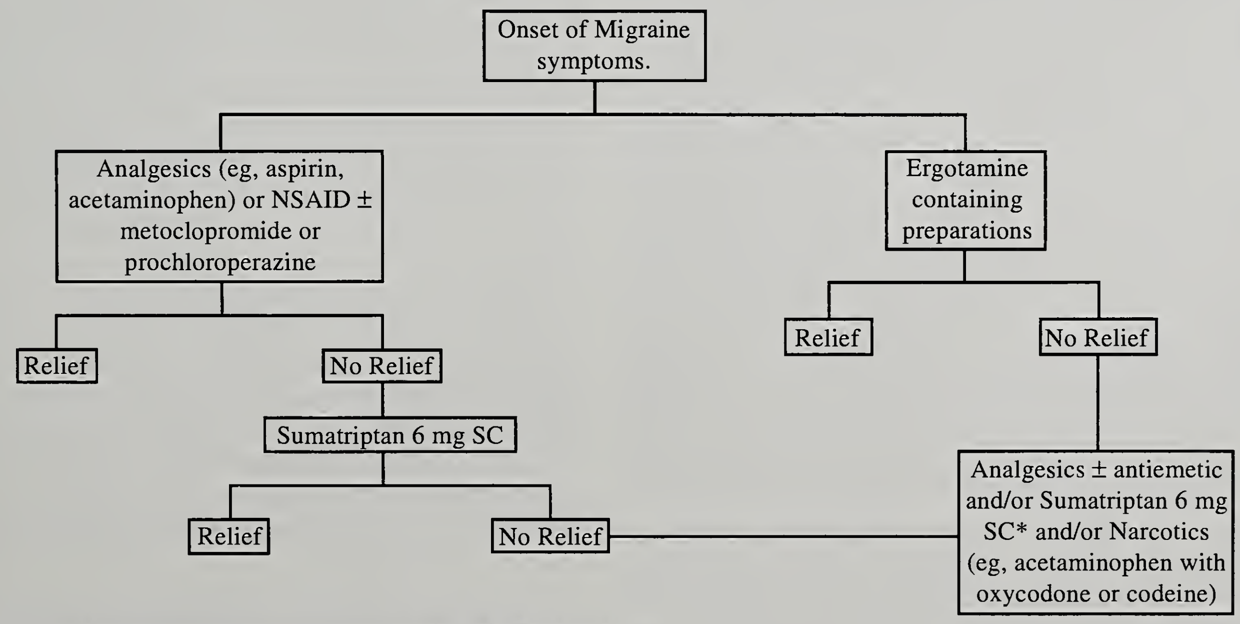
Place in Therapy

Sumatriptan appears to be a welcome addition to the treatment arsenal against migraine headaches, however, the excitement surrounding the use of this agent should be tempered against several facts. First, sumatriptan is an expensive agent costing approximately $27 per 6 mg. Also, it is apparently effective irrespective to the time differential between onset of symptoms and administration of medication, therefore, it seems reasonable to administer more traditional and less costly agents such as acetaminophen, metoclopromide, prochloroperazine, and nonsteroidal antiinflamatory agents to migraine sufferers initially and to reserve the use of sumatriptan for those instances in which pain relief is inadequate. A suggested algorithm for migraine attacks is given in Figure 1.

Discussion

Although sumatriptan does appear to be effective in alleviating acute pain and symptoms associated with migraine headaches, there still remains some concerns regarding the widespread use of this agent. First, although the initial response to sumatriptan appears promising, a high relapse rate of migraine pain within 24-hours has been observed.[11,12] In one, study the 24-hour recurrence rate was reported as 34% to 38% for sumatriptan-treated patients compared to only 18% in patients receiving placebo ($P < .05$). Although an explanation for this observation was not found, it was suggested that perhaps this phenomenon was due to the short half-life of sumatriptan and the existence of a rebound phenomenon. Regardless of the cause, the existence of this high recurrence rate raises the question of safety and efficacy of sumatriptan use on a regular basis. The effects of long

Figure 1.—Treatment Algorithm


Onset of Migraine symptoms.
Analgesics (eg, aspirin, acetaminophen) or NSAID ± metoclopromide or prochloroperazine
Ergotamine containing preparations
Relief
No Relief
Relief
No Relief
Sumatriptan 6 mg SC
Relief
No Relief
Analgesics ± antiemetic and/or Sumatriptan 6 mg SC* and/or Narcotics (eg, acetaminophen with oxycodone or codeine)

*Do not use sumatriptan within 24 hours of ergotamine preparations.

term administration of sumatriptan on patients have not been studied to date and the effect of repeated administration on efficacy is unknown. Secondly, although the use of sumatriptan has not been shown to affect systemic blood flow, this possibility still exists. Evidence for such an effect does exist in reported side effects such as dizziness, chest tightness, feeling of heaviness, numbness, and weakness. Although these side effects do not point directly to systemic vascular involvement, they do cause one to address this possibility.

Conclustion

Clinical studies have shown sumatriptan to be safe and effective in the management of acute migraine attacks. However, despite its promise, we should use sumatriptan judiciously weighing potential gains against both cost and potential side effects.

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50 Years Ago

From *The Connecticut State Medical Journal*

June 1943

The Medical and Surgical Aspects of Hypertrophy and Cancer of the Prostate

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IN its early stages prostatic hypertrophy may be largely a medical problem. It frequently comes on before 50-years of age, and after 60, probably one man in four has some form of prostatic hypertrophy.

Changes in micturition usually are the first symptoms noticed. Hesitation at the beginning of urination, reduction in the size of the stream, and slight discomfort are usually the first complaints. Along with these, there may be a feeling of fullness, a diminution in potentia and sometimes precocity of ejaculation. In those cases that are associated with prostatitis, the patients may have had symptoms for a long time and present a varied complex of complaints, with local and referred pain, especially in the back and thighs. In some of these cases calculi may have developed in the prostate and led to an exacerbation of the irritation and sometimes to hematuria, especially when the calculi erode into the urethra and are passed during micturition. For protracted period there may be very little residual urine, only slight back pressure effects upon the urinary tract and no reduction in the renal function, as shown by the divided phthalein test and blood chemistry. During this period gentle massage of the prostate, perhaps supplemented by diathermy or sitz baths, may prove effective therapy. With the gradual increase in the obstruction, trabeculation of the bladder, with eventual formation of cellules and diverticula, generally occurs. The obstruction to free outflow of urine from the ureters increases with resultant stasis in the column of urine above, back pressure effects upon the kidneys, prolongation of the appearance time and reduction in the output of phthalein at half hourly intervals. The blood urea percentage may also begin to rise. Not infrequently a strain may be put on the cardiovascular mechanism, and gradual increase in the blood pressure supervenes.

But before these important medical complications arise, urination usually has become more and more difficult and frequent, and the residual urine increased considerably, so that the problem becomes a surgical one.

If the urine has not become infected, it is important to consider well the next steps and to avoid, if possible, any contamination of the urinary tract with bacteria. Catheterization is often a serious procedure. Not infrequently the narrowing and irregularities of the deep urethra, resulting from the growth of the prostatic lobes, make it difficult to introduce an ordinary rubber catheter. The obstruction in the middle lobe may often be surmounted by the use of a rubber catheter which has a coude curve. This modern instrument has done a great deal to eliminate the difficulty in introduction and the traumatism incident to catheterization; as a result, there is less likelihood of infection. In order to insure against that, the patient should immediately be put on one of the sulphonic drugs. One should not only use the strictest asepsis, but also wash out the bladder with a boric acid solution.

Before catheterization is done, it is important to palpate and percuss the suprapubic region to determine whether the bladder is distended, and if a considerable amount of fluid is present, it is wise not to completely empty the bladder with the catheter. It has been shown in

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From the *Connecticut State Medical Journal*, November 1943.
From the James Buchanan Brady Urological Institute, John Hopkins Hospital.

many cases (some very unfortunate ones), that hemorrhage from the bladder and even from the upper urinary tract may come on as a result of quick emptying of the bladder and the consequent sudden release of the pressure against which the blood vessels of the pelvis, ureter and bladder have been working. In rare instances suppression of urine and anuria has resulted. By gradually emptying the bladder over the course of a day or two, so called vesical decompensation, the complications of hemorrhage and anuria may be completely avoided. In such cases an inlying catheter usually is employed instead of interval catheterization, but the difficulty of preventing infection from the urethra into the bladder is increased, and even though the urine is made strongly antiseptic, cystitis usually occurs eventually.

With the presence of considerable residual urine, the decision as to what operation should be done requires careful collaboration between the internist and urologist. The exact diagnosis of the local condition is of great importance. As remarked above, prostatitis and calculous disease of the prostate not infrequently have preceded the development of hypertrophied lobes. The induration that accompanies these complications often makes the recognition of carcinoma difficult. An early nodule of carcinoma, which is characterized by third degree induration, almost of stony hardness in the posterior part of the prostate just beneath the capsule, resembles closely the condition produced by one or more calculi. Fortunately, a plain x-ray will furnish the immediate diagnosis.

Tuberculosis of the prostate sometimes is very similar in its distribution and induration to carcinoma. It usually is associated with tuberculosis of the vesicles and not infrequently with involvement of the epididymes, vasa and sometimes other portions of the genitourinary tract, so that the recognition of the tuberculous nature of the prostatic induration is not difficult. In three cases, however, I have encountered localized markedly indurated nodules in the prostate which were due to tuberculosis and not associated with the involvement in any other part of the genitourinary tract. In one of these cases, when the prostate was exposed at operation, a caseous nodule was disclosed and evacuated without opening the urinary tract and with excellent result. In another case radical prostatectomy was done when a tuberculous lesion was mistaken for cancer. In such nodules of tuberculosis in the substance of the prostate, only very careful diagnostic studies, including exposure of the prostate through the perineum, biopsy and, if necessary, microscopic study of stained frozen sections will be necessary. The practitioner who discovers old tuberculous lesions in the lungs, either by physical examination or x-ray, will be on his guard when indurated areas arise in the prostate.

Many years ago I announced that in 21 per cent of my cases with prostatic obstruction, carcinoma was found present, and that it involved the posterior lobe where it was easily palpable with a finger in the rectum. I also noted the fact that third degree induration, even when the nodule was small, was almost diagnostic of cancer. In the series of cases that I reported, it was shown that carcinoma of the prostate was accompanied by benign hypertrophy of the lateral lobes in over 50 per cent of the cases, and that the two lesions often existed and grew side by side independently. If such lobes were removed by suprapubic enucleation, often no evidence of carcinoma would be found, even on microscopic study. The same was true with specimens removed by transurethral resection, the posterior carcinomatous portion sometimes remaining untouched by both of these operative procedures. Later on, when the disease penetrated the hypertrophied lobes, carcinoma would be evident and not infrequently had completely replaced the benign adenoma.

In this same publication I described a very radical operation which had been successful in curing cases of carcinoma of the prostate. This technique included not only removal of the prostate with its capsule and a portion of the membranous urethra, but also a cuff of the bladder, both seminal vesicles and fascia which covered them, along with the ampullae. The extensive defect remaining was easily closed by drawing down the anterior wall of the bladder and anastomosing it to the stump of the membranous urethra, and then approximating the rest of the vesical opening by sutures farther back. Thus complete closure with the perineal wound and restoration of satisfactory micturition often occurred promptly.

In 1935 we were all startled by the publication of papers by Rich and by Moore, which showed that carcinoma of the prostate indeed occurred far more frequently than we had suspected. In 292 consecutive autopsies, Rich found carcinoma, often in occult or early form, in over 14 per cent of the cases, and Moore, in a report of 242 cases, published simultaneously, found an even higher percentage of carcinoma.

This amazing demonstration of the frequency of carcinoma of the prostate has been confirmed by other and more extensive series of cases, among which are clinical reports where prostatic obstruction treated by transurethral resection or suprapubic or perineal prostatectomy have been shown later to be carcinoma. It is therefore incumbent upon the medical profession to seek out and recognize carcinoma of the prostate at an early stage. We have shown that tiny indurated areas, even smaller than a pea, just beneath the prostatic capsule in the posterior lobe may be carcinoma. The fact that thee posterior lobe is the region in which carcinoma starts in a large majority of the cases renders their recognition easy because of its proximity to the examining finger in the rectum. The fact that in good number of cases no symptoms have been present shows the great importance of routine rectal examinations in men past 45 years of age. Sir William Osler used to insist on the importance of a rectal examination as a part of every physical, and stated that the difference between a good doctor and a poor one was that the former knew how to do a rectal examination. I might add: and also was suspicious of an indurated nodule in the posterior lobe of the prostate, even if it is small. For years I have laid great stress on these facts, and along with other urologists have finally awakened the medical profession as to the frequency of carcinoma of the prostate and the possibility of recognizing it by appropriate rectal examinations. But still one cannot too forcibly reiterate the fact that it is incumbent upon medical and surgical men alike to have constantly before them the frequency of carcinoma of the prostate in elderly men and take advantage of every opportunity to make a rectal examination, and be suspicious of a markedly indurated area, even if tiny.

Having recognized such an area it is manifestly the duty of a physician, and especially the urologist, to subject the patient to an early perineal operation through which the posterior surface of the prostate can be reached without injuring the external sphincter or the rectum, the suspicious area seen, palpated, and, if necessary, excised and subjected to frozen section. By such means we have freguently recognized very early carcinomatous areas and cured them by radical surgery. If the lesion is found to be due to tuberculosis or stones, appropriate conservative procedures may be carried out. If, instead of cancer, hypertrophied lobes, bars or contractures at the vesical neck are discovered, by enlarging the capsular incisions, enucleation by excision of the obstructive portion, may be carried out without difficulty. By modem techniques the entire defect can be closed in by drawing down the vesical neck and suturing it to the remaining lateral capsular portions of the prostate.

I have dwelt thus lengthily upon the frequency of carcinoma and its ease of recognition because of the fact that it has been possible by the means described above to cure at least 50 per cent of the cases of carcinoma of the prostate that have been found appropriate for the radical operation. These patients have been followed from five to 25 years after leaving the hospital. In those patients who have come back with recurrences, examination of the specimen removed at operation usually showed that the carcinoma had extended well into the seminal vesicles or into lymphatics leading beyond the area of the very radical operation which I have devised.

Perhaps it will be urged that such a high percentage of cures is indeed impossible, but one must remember that the prostate with its capsule propria, and the two fascias of Denonvilliers which surround it and the seminal vesicles, effectively prevent extension of the cancer downward or posteriorly for a considerable period, and that the radical operation with its high removal of the seminal vesicles and base of bladder in a large percentage of the cases subjected to operation is completely radical. It is therefore easy to see how it should be much easier to obtain radical cures in cancer of the prostate than, say, carcinoma of the breast which is not encapsulated and metastasizes early, not being hindered by capsule or fascia.

Benign hypertrophy presents many problems of interest to the internist, whose help is often of vital importance in the study and successful treatment of these aged patients. The development of cardiovascular and pulmonary diseases is of frequent occurrence in these often very old men. By rest in bed and appropriate therapy, very severe cardiac and vascular lesions may be so greatly improved as not to interfere with the successful carrying out of major surgical procedures upon the prostate. The same is true in cases of long-standing hypertension, and even those with a history of cerebral accidents. Not infrequently such patients have gone smoothly through prostatectomy, even the radical operation.

The most amazing improvement, however, is that accomplished by appropriate treatment of the kidneys, whose function has been greatly impaired by backpressure effects. Continued drainage through a catheter is desirable in almost all cases where the residual urine is large, especially where the phthalein test (done with a catheter in place) shows impairment in function. The blood urea determination and other similar tests are valuable principally because of their confirmation of the renal impairment shown earlier by the phthalein test. Even where both show great reduction in renal function, one must not despair because by continued catheter drainage and the use of large amounts of fluids by mouth, subcutaneously or intravenously, serious uremias may be combated. One of the most remarkable things in renal disease is the ability of kidneys impaired almost to the point of death to improve and eventually even return to normal in some of these cases.

By 1909 I had shown that by means of prostatectomy through the perineum it was possible to cure patients with prostatic obstruction with a very low mortality and with excellent functional results. I also had shown that early carcinoma of the prostate could be recognized and cured by the radical operation. There remained a third type of case: contractures at the vesical neck, bars and small lobes, in which it seemed to me that a simpler procedure might be devised. It was then that I brought out my urethroscopic prostatic excisor or "punch" instrument and showed that with this simple instrument it was possible to remove prostatic obstructions quickly and safely. In a short time I was able to report over 200 cases without a single death. Eventually I brought out a cautery punch instrument to lessen the hemorrhage. Caulk designed a more simple cautery punch and found that it was able to remove even prostatic lobes of considerable size. He soon became the ardent advocate of the punch operation for the removal of all types of prostatic hypertrophy and urinary obstruction. We were followed by others with various modifications, some retaining the cold-cutting feature of my punch instrument, and others replacing it by an electric loop.

This procedure, which could be carried out without an external operation, appealed to many as the ideal method to attack the obstructing prostate, especially to those who were not urological surgeons. As a result, thousands of cases have been reported. While the mortality in the hands of the great majority of these urologists is no lower than that obtained by perineal prostatectomy, certain very large series of cases have been reported with a mortality of about one per cent. (This has not infrequently been approximated by the open operation for prostatic enucleation.) But the apparent simplicity of the transurethral procedure, and the ability to discharge the patient from the hospital in about a week had such an irresistable appeal that patients and family physicians were soon demanding this type of operation, not realizing that there were often complications which either interfered with the rapid course of the patient toward restoration to normal function, but often were followed by painful conditions or even recurrences and a return of obstruction.

In an effort to arrive at an accurate estimate of the respective success and value of prostatectomy and transurethral resection, I recently have reported in Surgery, Gynecology and Obstetrics an extensive analysis of 200 cases in which transurethral resection had been done elsewhere, and the patient came to the Brady Urological Institute complaining of a persistence of symptoms. I cited brief case histories; illustrated by photographs of some of the specimens, which I had enucleated through the perineum. Most of the prostates enucleated weighed from 50 to 100 gm., but some of them were much larger; one weighed 235 gm. and was larger than a fist, although the patient had been subjected to a transurethral resection elsewhere. There was also a group of four cases in which calculi formed in the bladder after transurethral resection. There were cases in which another operation for obstruction was not indicated, but the patients complained of frequency of urination, pain, severe burning and difficulty. Chronic urinary infection of the bladder persisted and gave serious symptoms in a large number of the cases. In 26 cases cancer of the prostate was present. In most of these cancer had not been recognized, and the transurethral operation had been carried out with ultimately very poor results. Fortunately, there were four patients with cancer which was still in an early stage so that it was possible to carry out my radical operation with prospect of cure.

This series of 200 cases, which I discussed in considerable detail, showed that there are many cases of prostatic obstruction for which transurethral resection is not a satisfactory operation. Some of these are prostates of considerable size in which the tissue removed by transurethral resection is inadequate, and that which remains goes on to produce more and more obstruction. But in other cases, where the prostate is not much enlarged, the results often are unsatisfactory also, owing to the development of prostatitis and infection of the bladder which cannot be eradicated and eventually results in frequency, dysuria and other painful symptoms which make life miserable. Complete enucleation of the hypertrophied lobes through the perineum and closure of the defect by sutures gives generally far more satisfactory ultimate results. Another great advantage of the open operation through the perineum is that an opportunity is afforded to recognize cancer and cure it by radical operation and the patient stays in the hospital only a few days longer and is permanently relieved.

Prostatism is so complex in its symptoms and so varied in its pathology that it can be handled satisfactorily only by careful selection of the operative procedures best suited to obtain a radical cure. The exclusive use of transurethral resection for all types of prostatic obstruction, even the very large and the malignant, is indefensible and unpardonable!

Don't Throw Out the Caring With the Nostalgia

I opened an office for the practice of internal medicine on Farmington Avenue in Hartford on 1 July 1955. At that time, one doctor in one office was the predominant way to practice. All the seniors (including the rare medical specialists) would sign out to the younger physicians who sometimes covered each other. As a rule we worked seven days a week taking off one afternoon.

My fees were $6.00 for an office visit and $8.00 for a house call (deplored by my seniors who charged 50 cents and $1.00 respectively, when they started out). Sitting up all night in the ER with a patient in pulmonary edema and arrhythmia taking an ECG and subsequent rhythm strips myself (there were no monitors and the intern went to bed at midnight) was worth $25.00. The second day in the hospital brought $10.00 to $15.00 and subsequent visits were $5.00 each. Taking an ECG at home brought $10.00. (Always at 2:00 AM on a winter night, nearly always on the third floor.)

Patients were responsible for their own bills. They and I knew that our relationship included understanding how they would pay for their care. If they couldn't pay they might bring garden produce, freshly baked bread, or, perhaps, do odd jobs around my house, or we just might forget the balance. Once in a while I would receive a request from an indemnity insurance company to fill out a form so that my patient would be reimbursed for what he owed me. Included was a $3 check from the carrier for my trouble.

Those who couldn't afford private care were seen in clinics and on the ward services of teaching hospitals. Their attendings were a mix of the best and brightest of the practicing community and those of us beginners lucky enough to be appointed to the services of our distinguished teachers. Three months a year on the wards of a large general hospital, another three months reading cardiograms at a now defunct municipal hospital, and caring for acute poliomyelitis patients in an isolation unit gave one a great sense of satisfaction in directly helping those who needed help.

Today, some 38 years later office overhead has more than doubled as a percentage of gross income (from less than 25% to 55% for primary care physicians), primarily due to the complexities of the reimbursement system. Almost all patients are covered by some private health benefit plan or Medicare or Medicaid. The sense of satisfaction in helping people is still there but the relationships with payors are strained. When the payor was the patient we could look each other in the eye and come to an understanding about the treatment plan and how to pay for it or not pay for it as the case might be.

That special relationship between us has changed as the third party has insinuated itself between the first and second party in an often intensive, sometimes adversial, and always impersonal way.

Let us hope that the changes coming in Connecticut and the nation as regards the reimbursement system permit patients to feel empowered as they once were. The same hope applies for their physicians. After all, the interpersonal relationship between our patients and ourselves can play a significant role in shaping their treatment response.

Yes, we want all Americans to have access to health care. Yes, anyone who works should have health insurance as most others who work do. In fact, those on welfare or Medicare are also covered. Yes, some degree of ascertainment of outcome is in the best interests of physician and patient alike. Yes, we will cooperate with the officials of our state as they determine what health care reform measures are to be put in place in Connecticut.

Having said that, is it not also reasonable to take steps to preserve the special private relationship between patient and physician? Cannot oversight of the process by government or private third party be in a spirit of cooperation, nonadversial, designed to help the patients and give them a sense of security about the financing of their care? Can't the third party get out from between the patient and the physician in the private interactions of the treatment process?

In our nostalgia for the past we must not overlook the new concepts of accessibility of care, the expensive advances of high technology, the need for health care reform, and the proper role of the third party payor. But we should still try to preserve some of what was good about the interaction of a responsible patient and a responsible caring physician. It worked in the mid '50s, why not now?

Howard J. Wetstone, M.D.
President

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The Captain of All These Men of Death Has Returned

ROBERT U. MASSEY, M.D.

IT is commonplace to observe that in the Western world tuberculosis death rates have, until recently, been falling since the mid 19th century. It had undoubtedly been high during the preceding two or three centuries but because causes of death were not systematically recorded we cannot be sure of the pattern. In Connecticut death rates from tuberculosis stood at 267 per 100,000 in 1849, and had fallen to 119 per 100,000 by 1912.[1] Accuracy of diagnosis may have partially accounted for the decline since pneumonia deaths rose during this period, quite contrary to the falling mortality from other infectious diseases, such as typhoid, scarlet fever, and diphtheria. In fact, in 1911 pneumonia caused 1,722 deaths in Connecticut (about 1.1 million population), more than any other disease, while tuberculosis was second with 1,700 deaths![1]

The word *tuberculosis* was first used in the 19th century; Laennec called the characteristic lesions of pulmonary phthisis *tubercles* in 1830, describing their development and how they might be detected by mediate auscultation. Earlier the name of the disease was consumption, a translation from the Greek *phthisis,* a decline, decay, wasting away. Phthisis was the word used by Hippocrates; its grim prognosis may be inferred from the related verb form, *phthio,* one meaning of which is to perish or die; the noun, *hoi phthimenoi,* meant the dead. TB has been around since prehistoric times, and while the significance of the paleopathological evidence for human beings is arguable, mycobacteria specific for other species are ubiquitous in nature. Throughout history and on most continents it has been "The captain of all these men of death . . .."

And now it is coming back, in Europe, in America, in Africa, "a little cloud out of the sea, like a man's hand." Death rates were lowest for New York City in 1978. Victory over the disease was being declared in 1976 because we had the "ultimate" technology, isoniazide and other antituberculous drugs, and "modern medicine can take a bow here."[2]

Indeed we could. No one doubts the multiple factors involved in the spread and aggressiveness of tuberculosis, but sanatorium care and then chemotherapy, and perhaps BCG, did hasten the decline of this major killer, a decline that had begun a decade or so before Koch announced his discovery of the bacillus in March 1872.

After 1978 in New York City the numbers at first stopped declining, then began to rise and have continued their increase; by the end of the 1980s the incidence of the disease was up by 68% and it is now increasing almost everywhere worldwide.[3] Tuberculosis morbidity in the United States reached a low point in 1984 and has been rising since then. The AIDS endemic is the cause, exacerbated by the development of multiple drug resistant (MDR) tuberculosis, at first in New York and Miami, but now spreading beyond North America to the rest of the world.

It is estimated that one third of the world population is tuberculin positive, a reservoir of mycobacteria that might have remained essentially closed before the appearance on the scene of HIV. Now, while this retrovirus, contrary to earlier predictions, has not spread widely into the heterosexual population (except in Africa), there is little to prevent the highly infectious *M. tuberculosis* from being broadcast all over the place, even the deadly drug resistant strains. This ancient disease, roaring through the last three or four centuries, taking over where leprosy and plague left off, apparently always around, waiting in the wings, has a kind of periodicity of its own. When society lets down its guard, for example, when tuberculosis patients unlikely to be compliant are treated as outpatients, we should not be surprised to find MDR tuberculosis in HIV-negative health care workers. It has already appeared in many places in epidemic form.[4]

Worldwide TB may have caused 2.9 million deaths in 1990; with one third of the world's population harboring *M. tuberculosis,*[3] and more than 10 million HIV-positive,

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ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

and with few places more than 12 hours away, we may have to admit a new factor into our formulas for heatlh care reform, reassess research funding priorities, and even challenge some of our sacred civil liberties.

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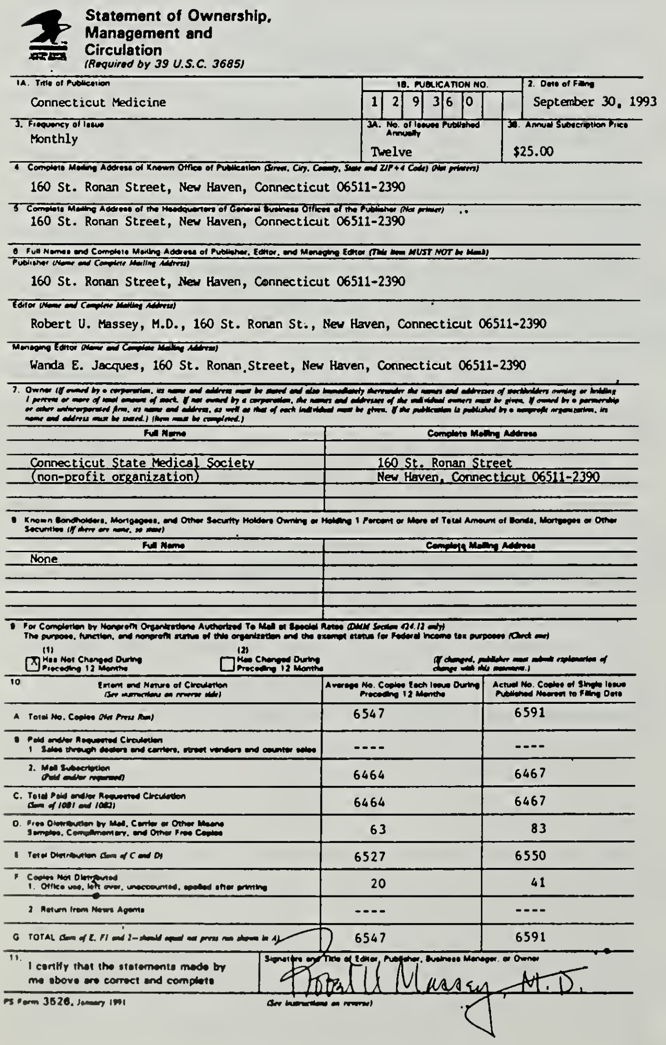

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This Month's Reading in Review

TIMOTHY B. NORBECK

- "At a time when government is in deservedly ill repute here and all over the world, the United States is moving inexorably toward its first peacetime takeover of a major industry (one comprising 14% of the economy)." Robert D. Novak, in the *Washington Post* on health reform.

- "To claim that the cost of the uninsured coverage will come out of bureaucratic savings or paperwork reduction is to hypnotize yourself." William Safire, on proposed "savings" in the Clinton Health Plan.

- Consumer researchers Bruskin-Goldring say that Americans have become more satisfied with their auto mechanics, plumbers, and electricians over the past six years, but they don't think as much of their lawyers. ...Physicians got the highest score, with 88% of the respondents in a survey reporting they were satisfied with their physicians—the same as in 1987....Stockbrokers were the lowest of the nine professionals, with 28% of the respondents satisfied....Lawyers fell to 49% from 52%....And while dentists dropped in the poll, they still managed an 87% satisfaction rate.

- Of those 72,461 who took their state bar exams in 1992, 52,826 passed....More than 51,000 of them were admitted to the bar, bringing the nation's lawyer total to 799,760.

- In Europe and Japan, all liabilities, including medical, are no higher than 0.5% of the Gross National Product....In the U.S., the liabilities constitute 2.5% of the budget or five times more.

- Total medical costs for General Electric fitness center participants declined significantly compared with costs for nonparticipants following 12 months of fitness center participation....In the year after joining, per capita costs for participants decreased by 38%, while costs for nonparticipants increased 22%.

- The average physician spends more than three and a half weeks each year filling out paperwork, which is more time than the average American spends on vacation. *Washington Monthly.*

- According to a study reported in the *New England Journal of Medicine*, lifestyle changes can lower a man's risk of heart disease and premature death....When they took up moderately vigorous sports activity, they lowered their mortality risk by 23%...When they quit smoking, their death rate fell by 41%....Losing excess weight, in the absence of other changes, had no effect on the death rate.

- When the End-Stage Renal Disease program began in 1972, it served 11,000 people at a cost which had been estimated by the Washington bureaucrats at $35 million to $75 million for the first year and which would rise to $250 million by the end of 1977....The actual costs were $229 million for that first year and $1 billion in 1977....The program now serves 165,000 (estimated to reach 300,000 beneficiaries soon) at a cost of $6.6 billion....For every million people in Great Britain, 154 are on dialysis; in the U.S. that number is 539 out of every million.

- Only 8% of American kids were born out of wedlock during the 1950s compared to 25% today....Congressional employees totaled around 5,000 back then versus some 20,000 today....The Dow Jones industrials rose during that decade at an annual rate of 11% as opposed to a 5.4% rate since then....Real disposable per capita income in the '50s grew at a yearly rate of 3.3% compared to a 2.1% rate since that time. David Halberstam's new book, *The Fifties.*

- *Only in America:* As reported in the *Los Angeles Times*, a Los Angeles County parking-control officer who ticketed a Cadillac parked illegally got no argument from the driver sitting behind the wheel....The motorist had been caught fair and square illegally parked....There was a reason for his silence, however, since he had been shot dead about 13 hours before his car was ticketed.

  The parking officer left the ticket on the dashboard and drove off in search of other violations....There is no statute requiring the reporting of a dead body, said a sheriff's spokesman.

TIMOTHY B. NORBECK, Executive Director, the Connecticut State Medical Society.

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Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that the are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

IN RESPONSE TO DR. ARTHUR KOFFLER'S ARTICLE

To the Editor: As a Clinical Neurologist I feel obligated to comment on "Prompt IV Anticoagulation of Cerebral Embolus Based on Clinical Information Alone: A Case Report" by Arthur Koffler which appears in *Connecticut Medicine*, August 1993, page 507.

Dr. Koffler based his decision to institute intravenous Heparin therapy on the documented history of normotension. He felt that the origin of the patient's cerebral ischemia was cardiac embolization.

It is a well established fact that embolic cerebral ischemia alone, independent of hypertension, can present as hemorrhage infarction. In such situations the use of intravenous Heparin may be associated with grave consequences.

Aside from a knowledge of the patient's blood pressure, a history of headache and/or change in level of consciousness would be important clinical signs of possible intracranial hemorrhage. CT scanning, of course, is the best way to determine whether a hemorrhagic component exists and whether it is safe to initiate Heparin therapy.

In the case presented by Dr. Koffler, Heparin was instituted as an infusion not as a bolus. Therefore, the patient was not therapeutically anticoagulated for hours. In the same time, a CT scan could have been obtained and anticoagulation instituted by Heparin bolus. A much greater degree of safety would have been achieved in this case. Moreover, there was no cost saving involved as Dr. Koffler still felt it necessary to obtain a CT scan later in the patient's clinical course.

I would also point out that the use of Heparin in such cases is for the prevention of future embolization and not for treatment of the acute cerebral ischemia. The brain can only tolerate four to six minutes of ischemia before infarction takes place. Most neurologists think that the clinical outcome of an embolus to the brain has been established before physicians have an opportunity to intervene.

In the future it appears that physicians will be encouraged to rely on their clinical judgment rather than expensive laboratory testing. We should not do so if this means compromising the quality of patient care.

Jeffrey L. Gross, M.D.
Bridgeport

Dr. Koffler Responds: 1. My examination of the patient at the time of her stroke showed no evidence of a massive infarct. Because of her advanced age, the possibility of aneurysm was not considered. 2. There was absolutely no history of headache, past or present and no change in the level of consciousness. 3. Because a double strength of Heparin was infused for two hours, it is my opinion that prompt and adequate anticoagulation was achieved rapidly. I disagree that the patient was not anticoagulated for hours. She was anticoagulated promptly and with with a greater degree of safety. 4. Cost saving never entered into my consideration. The CT Scan taken later was to exclude any other demonstrable brain abnormalities. 5. Heparin is indeed widely used to prevent embolization in cases of chronic atrial fibrillation. No previous Heparin had been given to this patient bofore the embolus. It was the intention to use Heparin effectively to obtain dissolution of the clot, if possible, through the promptness of administration. 6. This case report presents a set of unusual circumstances which would be hard to reproduce. Never in my 55 years of practice have I seen such a case. I did not intend to have physicians generalize from my presentation. Perhaps it will turn out to be a seminal case report and inspire new directions to be taken in the research on treatment of stroke. Our goal must be to prevent stroke, and in cases where this is not possible, we must find a way to abort them whenever circumstances permit. This is a must!

Arthur Koffler, M.D.
Stamford

IN RESPONSE TO DR. JAMES L. ELIASOPH'S GUEST EDITORIAL

To the Editor: In response to the Guest Editorial in the August 1993 issue of *Conn Med* (57:549). Bravo! Very much needed to be said, and written with the style to be expected of a disciple of Strunk.

What was not specific to the topic and was not addressed, but is also germane in this atmosphere of health care reform, is the proliferation of paperwork we have witnessed. While adoption of a single simplified insurance form is certainly valid and necessary, it does not address the problem of garbage hospital charts replete with unintelligible, duplicative verbiage, read by no one, and of use to even fewer.

While the blame for this is commonly attributed to pressures (legal and governmental) from outside the profession, we have no one to blame but ourselves. We sat by and allowed nursing, out of the same motivation that killed diploma schools, to fill charts with useless, meaningless gibberish. In the same way, with little or no resistance, we in the medical profession have allowed ourselves to waste valuable skilled time in the interest of "documentation." Where have the voices of protest been?

Who in medicine has protested the immense and costly proliferation of hospital and nursing administrative positions? The nonproducers, the same problem that has so adversely affected American business. Government cannot and will not alter these problems. The voices of reason, and the voice for reversion to a leaner more temperate age, must come from within medicine. We must help ourselves.

Forgive the diatribe.

Again, my congratulations on a wonderfully written editorial.

Stewart A. King, M.D.

Darien

THE CONNECTICUT NURSES' ASSOCIATION RESPONDS TO DR. JAMES L. ELIASOPH'S GUEST EDITORIAL

To the Editor: Dr. James L. Eliasoph's diatribe against the over-educated nurse of today, published as a guest editorial in the August 1993 issue of *Connecticut Medicine* demands an informed response.

Yes, nursing education has moved away from an apprenticeship form of training and into the classrooms of universities, just as medical education did earlier this century. The complexity of the health problems cared for by nurses demands a solid background in the liberal arts, social sciences, physical and biological sciences, as well as extensive education in nursing science and nursing art. Graduates leave college prepared to begin providing direct care to patients under the mentorship of more experienced nurse colleagues, just as medical school graduates do. Their patient care is enhanced, not diminished, by their college degrees. Certainly I have heard no outcry from the consumer public begging for a less-educated nurse.

It is true that many nurses are forced by the realities of modern day bureaucracy to spend more time with pen and paper in hand than they would like. The same is true of many physicians of my acquaintance, and disturbs them as much as it does me. I look forward to some relief from the burdens of onerous paperwork in the restructured health care delivery system I see ahead of us.

I agree with Dr. Eliasoph on one point and that is the importance of keeping the needs of patients at the center of our professional focus. I submit that professional standards for clinical performance and appropriate credentialling for specialty and advanced nursing practice are congruent with that goal. The public is well-served by a system that assures it that certain nurses have the added education and experience to competently care for patients in particular situations. What is to Dr. Eliasoph an "obsessional preoccupation and infatuation with credentials," is to nurses a mark of professional self-regulation in the public's interest.

However defensive and arcan I may find Dr. Eliasoph's harangues, I strongly support his right to hold and express his views. I am, however, somewhat disheartened at the decision of the editorial board of *Connecticut Medicine* to provide him such a public pulpit from which to proclaim them. I believe the interests of patients, which we all hold in common, are best served bya an atmosphere where the disciplines of nursing and medicine are committed to working in partnership to strengthen both fields, with the goal being the best possible patient care. That agenda is not served by guest editorials such as that of Dr. Eliasoph. Should one of the members of my association have a bad day and submit an essay railing against doctors as pompous, over-educated, and being more interested in getting rich than in caring for patients, you have my assurance that we will not publish it.

Barbara E. Pokorny, M.S.N., R.N., C.S.
President

Meriden

IN RESPONSE TO DR. JAMES L. ELIASOPH'S GUEST EDITORIAL

To the Editor: In his recent guest editorial in *Connecticut Medicine,* Dr. James L. Eliasoph launches a sweeping attach on all the progress in nursing education and leadership so hard won over the past two decades. It would seem from the perspective of hospice nursing, that Dr. Eliasoph is not familiar with all that these gains in education and leadership have accomplished that enables that intensive bedside care and the ascendance of hospice nursing which has fueled the hospice movement in the United States in the last 20 years.

Dr. Eliasoph may not have encountered in recent times a hospice nurse whose intensive orientation and ongoing education focus on the strengthening of clinical skills needed to care effectively for the type of patient who has been aggressively treated, not only for cancer, but for a broad range of diagnoses, who must be assessed, and whose disease progression must be carefully watched by the nurse who coordinates that patient's care. As a highly labor intensive as apposed to high tech type care, hospice care is nurse-driven. It is the nurse in the home setting often out of range from medical supervision, who gathers and supplies the information to the patient's primary care physician which enables the patient to be managed at home. Had nursing education not groomed and educated these nurses to be independent practitioners fully capable of managing not only the clinical and nursing arts aspects of their profession, but the administrative responsibilities that respond to the environment in which they now operate, hospice home care, enabling patients to have their way and stay at home for as long as practicable, would not have been possible.

Dr. Eliasoph's characterization exaggerates the adminstrative component of nursing function and does not acknowledge that the nursing profession is not unwise to educate for and function within all of the factors, networks, variables, and systems that bear on the very survival of the health care system.

It is interesting to note that the writer does not even mention home care, the nation's fastest growing industry, where hands-on nursing happens most frequently.

Nursing input is essential to prevent the development of systems, protocols, policies, and procedures that are not in synch with real practice, and thereby would result in duplicative waste of time and resources. It is unwise to complain of nurses broadening their skills and their reach so that their insights, interpretations, perspectives, and input can bear upon quality of care. We need only look to the changes in the Joint Commission standards which consistently have evolved to maintain parity among nursing leadership to parallel it with all of the other components of patient care and give nursing rightfully its voice. It seems nonsensical not to have nurses educate and lead nursing and to put nursing education within the province of medicine or any other profession. In fact, this could be an aberration and unlike the practice of any other profession.

The very nursing leaders that the writer seems to praise—Nightingale, Barton, and Cavell—were, in their time, innovators who brought the practice of nursing to be a profession. Would we now want to complain about the innovations and changes that bring nursing to its next generation?

Frederick Flatow, M.D.
Acting Medical Director

Michael J. Smith, B.S.N., M.H.S.A.
Vice President, Clinical Services

Rosemary J. Hurzeler, R.N., M.P.H., H.A.
President/CEO

The Connecticut Hospice, Inc.
Branford

DR. SAMUEL JOHNSON AND HEALTH CARE

To the Editor: The article on Samuel Johnson (August 1993) is informative and timely in this period when major health care decisions re being made.

Johnson (1709-1784) lived a life beset with disease, which seemed to echo Pope's statement, "this long disease, my life." Beginning life as a severely asphyxiated infant (his mother was a 40-year old primigravida), he developed a tuberculous infection in early infancy, likely acquired from a wet nurse with the disease. The rest of his carefully chronicled life featured a number of maladies, including the possible existence of Tourette's syndrome. But, it is the end of his life which might interest those of us who are involved with decision-making. He died of heart failure, likely caused by the aortic stenosis revealed at postmortem examination. Although aware that he was dying, he seemed to wish very much to go on living, with the help of procedures that might represent the extent of intensive care in the late eighteenth century, multiple incisions in greatly edematous calves.

Such a situation confronts us today, the wish of the patient, with the support of the family, to continue to live often opposing the physician's belief that to prolong the life may not be in the best interest of the patient. This is where the confrontation occurs, at the bedside or in a conference room where beliefs can be expressed and feelings respected.

William E. Hart, M.D.

West Hartford

GREEN BREAST MILK

To the Editor: We recently encountered a woman whose colostrum was green. The infant remained normal during a six-month follow up. A term 3686g girl was born vaginally to a 40-year-old mother, gravida 3, para 1-2, spontaneous abortion 1, with a history of genital herpes one to two years prior to delivery. Herpes culture four days before delivery was negative. The infant's physical exam was normal except for bilateral dysplastic hips.

The mother initially had green galactorrhea 22 months prior to delivery. A physical exam and mammogram at that time revealed no abnormalities. Recurrent episodes of green galactorrhea were noted 12 months prior to delivery, during the first trimester, and the month prior to delivery. All episodes resolved within one to three days.

Five hours after birth the breast milk was noted to be green, but the infant continued to nurse. The green color was not present for the next feeding, but returned for the subsequent feeding. The mother had a previous live birth. That infant was breast fed without complications and ther was no history of green breast milk.

On examination of the mother's breasts, only one duct symmetrically of each breast secreted greenish milk. The other ducts were secreting the usual whitish color. The mother had no fever, tenderness, or warmth in either breast. The child's breast tissue was normal.

The maternal milk culture grew 104 colonies of non-aureus staphylococci. Chemical analysis was not done. Breast feeding was resumed on the second postnatal day after temporarily being suspended. By the third day the breast milk was yellowish-white without recurrence of green milk. The baby thrived solely on breast milk for four months. Developmental and growth parameters were normal at six months.

There have been no reported cases describing green colostrum in a healthy mother. A heterozygous beta-thalassemic pregnant woman in Italy is described as having green milk after receiving ferritin. Bivalent iron was found in her milk.[1] Green nonpuerperal breast secretions have been shown to have no lactose and casein, or very low lactose and casein, compared to clear or white nonpuerperal secretions, which have lactose and casein present.[2] Colostrum's yellow color is due to high levels of beta-carotene.[3] There are no studies isolating the proteins, vitamins, carbohydrates, or minerals that may be the causative agent of dark green colostrum or breast milk.

Hilda Slivka, M.D.
Leonard Eisenfeld, M.D.
Catherine Worthley, MSW, CPNP
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Hartford

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From the Executive Director's Office

COUNCIL MEETING

Thursday, 14 October 1993

Ramada Inn, Meriden

Attendance

Present, in addition to the Chairman, Dr. Joseph Czarsty were: Drs. Ahamed, Beck, Bigos, Blum, Bobruff, Brooks, Deren, Eslami, Fischbein, Franklin, Freedman, Hollister, Keating, Lesnik, McDonnell, Meridy, Petro, Redmond, Sadowski, Sosa, Timmerman, Wetstone, Zanker.

Also present were: Mr. Norbeck, Mrs. Lindquist, Mr. Sullivan, Mr. Garofalo, Mr. Staples, Mrs. Connolly, (all CSMS staff), Mrs. Norbeck (HCMA), Mr. Freberg (NHCMA), Mr. Thompson (FCMA), Mrs. Snider (NLCMA)

Absent were: Drs. Cottle, Geary, Herzog, Kamens, Leach, Parke, Scarpa, Schwartz, Tesoro, Van Nostrand, Wolfson.

Dr. Czarsty introduced Amy Snider as the new Executive Director for the New London County Medical Association.

Reports of Related Organizations

M.D. Health Plan: Dr. Vincent Catrini and Mr. Douglas Hayward joined the Council to give an update on M.D. Health Plan. A written report was distributed to all members of the Council, which included the following comments:

(a) Of any State managed care delivery system, M.D. Health Plan found itself in the right place, at the right time, with the right priorities and with the ability to provide its employer constituents with just the right range of products, services and quality care for the right price. Dr. Catrini reported that the positioning of the HMO to be ready for such reforms was due to neither luck or divine providence. 1993 was a year of judicious planning and preparation on the part of the working boards, committees and senior management.

(b) At the end of 1992, M.D. Health Plan had been identified as one of the three selections for the State of Connecticut's Employee Health Benefits Plan. By the end of the open enrollment, M.D. Health Plan had signed up over 50,000 employees, dependents and retirees and brought total enrollment to 120,000. M.D. Health Plan is now the second largest HMO in Connecticut. M.D. Health Plan received recognition by Inc. Magazine's 500 as the fastest growing privately held company, one of the only five Connecticut qualifiers and the only health care company. Other recognition was received by the National Managed Health Care Conference with a partnership award presented in Washington, D.C. for a cost-saving health care benefit program.

(c) A new physician fee schedule created with the input of every specialty group will be initiated beginning January, 1944. The fee schedules will reflect the needs of primary care. Various initiatives have been undertaken to improve the Plan's relationship with its participating physicians. Provider relations has been expanded and representatives have been assigned to visit office practices throughout the state. This type of hands on help has been very well received by physicians and office staff. Seminars are offered to introduce new policies and procedures and give office personnel the opportunity to relate policy to their own community and practice location.

(d) A greatly improved, more sophisticated and less onerous utilization program has been adopted, known as "Peer-A-Med". This new program will allow M.D. Health Plan to concentrate its efforts only on those physicians whose practice patterns and claims habitually fall outside what is considered normal in comparison to their colleagues in the same specialty and region.

(e) Dr. Catrini noted that he and Doug Hayward have been approached by physicians and medical associations from many states around the nation to advise them on creating a physician owned HMO in their respective states. Physicians around the U.S. believe that Connecticut physicians with M.D. Health Plan, may have developed an effective response to the predicament of the potential deterioration of the independent practice of medicine.

Dr. Catrini reminded the Council that M.D. Health Plan is the physicians organization. MDHP management implements policy and philosophies of the physicians of the state who are represented on the Board. If there are any problems, he urged that the Board or he be contacted and stated that there is no call that is not returned or no issue not resolved.

A prolonged question and answer period followed and the Council thanked Dr. Catrini for his presentation.

Report on CMMI: As has been customary, prior to each House of Delegates meeting, there is a discussion and report on CMMI and CMIC. Dr. Eslami had submitted a written report which had been distributed with the agenda. Some of the items covered were:

(a) CMIC has declared its third consecutive Policyholders' dividend and four million of surplus contributions have been returned to eligible CMIC members.

(b) After four years of decreased or unchanged premiums, CMIC will implement a modest 6.5% increase for 1994, subject to Connecticut Insurance Department approval. 90% of Policyholders will participate in the dividend which for the majority of members will be greater that the rate increase.

(c) CMIC continues to be the leading insurer of physicians in Connecticut. There are now 2721 CSMS members who have CMIC as their professional liability insurer.

(d) Over 1200 members responded to a survey concerning opinions of the quality of care and member services. CMIC members ranked the attributes that a professional liability insurance company should possess as follows: Premium, Financial Security, Claims Service, Member Services, Physician Ownership and Discounts and Credits. 99% of members would recommend CMIC to their physician colleagues.

Dr. Eslami's report was accepted with commendation.

Report of the President

(a) A report entitled "Update on Health Care Reform Legislative Plan" was distributed to all Council members and Dr. Wetstone informed the Council that they would get such an update at each Council meeting. The report outlined activities that have taken place to date and a timeline for future actions.

(b) Dr. Wetstone reported that he attended a meeting that the Connecticut Hospital Association had arranged which included representatives of the Connecticut Association for Homecare, the Connecticut Association for Non-Profit Facilities for the Aged and the Connecticut Nurses' Association. The purpose of the meeting was to determine whether there was any commonality as they approach health care reform in Connecticut. What was discovered was that they seem to be in favor of a collaborated process which would favor a plan for Connecticut that is something like the Clinton Plan. They would favor global budgeting, capitation and a number of things which CSMS would have difficulty in supporting. Dr. Wetstone reported that some of things that they favor are along the thinking of CSMS and the AMA, but their fundamental reaction is to have a global budget which they presume will be assigned in Washington, but may be assigned in Connecticut, if Washington does not take any action by Spring. Dr. Wetstone further stated that they will continue to attend the meetings and will make it clear that there is no way that we could sign on to global budgeting and to additional bureaucracy and management, but will sign on to any parts of their program which follows the AMA position or the position adopted by the CSMS Health Care Task Force.

(c) Dr. Wetstone informed the Council as to the conditions at the CSMS building during the renovation and commended the staff for their good spirits in working under very stressful conditions. Dr. Wetstone recommended that the Council approve an amount, not to exceed $5,000, whereby each employee can select something in the $200 or $300 range, or whatever is an appropriate dollar range, that would enhance their work space as a token of the Council's appreciation for their good spirits under trying conditions. It was VOTED to approve Dr. Wetstone's recommendation.

(d) Dr. Wetstone commended the Treasurer for presenting a budget that will not increase dues for the fifth year in a row, which he thought was incredible considering the increased activities that CSMS has undertaken. He stated that was a great credit to the fiscal management and staff. However, he mentioned that if health care reform activities keep on escalating, it would not be possible to keep dues at the same level forever.

(e) Dr. Wetstone reported that he attended a meeting at CHA concerning quality assessment. A comprehensive white paper describing Connecticut Hospital's leadership in the development of a comprehensive database and access to data, from Hebert J. DiMeola, M.D., Chairman, "Toward Excellence in Care", Committee on Quality Assessment, was distributed to all members of the Council. He asked that Council members read the article and perhaps that at some future date Dr. DiMeola should be invited to a Council meeting to discuss this subject.

Report of the Executive Director

(a) *CSMS Staff:* Mr. Norbeck reported that Robert Brunell, Director of Scientific Affairs, was doing fine and hopefully would be back by mid-

November. He is doing some minor reading and writing at home at the present time.

(b) *Renovation Update:* Mr. Norbeck stated that it did not appear that the renovations would be completed by mid-November and probably the administrative portion of the building would be completed by mid-December and the Conference area not until after Christmas. The staff is surviving, but it has been very difficult.

(c) *Clinton Plan:* He reported that he had attended a meeting in Washington on health care reform and that he had mailed out a report on the meeting to all members of the Council and to the entire membership.

(d) *Washington Post Poll, October 10:* Right after the President's speech, on September 22, 56% approved of his plan, 24% disapproved. As of October 10, 51% approved, 39% disapproved. He reported that criticism is coming out on the financing and as more people understand the issues, the number disapproving will continue to grow. In the same October 10 poll, the question was asked "How much do you know about the Clinton Plan?" 17% replied a lot, 53% replied a little, 30% replied almost nothing, which means 83% know little or nothing about the plan.

(e) The following campaigns for and against the Clinton Plan have begun:

  (1) A group called "Citizens against Rationing Health Care" will spend ten million dollars in the next few months and send out twenty million pieces of mail and operate a grassroots lobby effort against the plan.

  (2) Ross Perot said that "along with NAFTA, the White House Health Care proposal would be another blow to U.S. business, because if one company moved to Mexico as a result of NAFTA, while a second doesn't, the second won't be able to compete because of the cost of health care." Perot's staff are putting a book together on health care which will probably be ready in 1994.

  (3) The Health Insurance Association of America kicked off a two million dollar TV campaign to oppose insurance premium caps.

  (4) The Democratic Party will spend three million dollars this year to promote the plan.

  (5) The Baltimore Sun and other newspapers are now talking about the Clinton Plan meaning rationing, a charge the administration officials emphatically deny.

(f) Supposedly, as many as 104 Congressional committees and subcommittees could claim jurisdiction over parts of the Clinton Plan and Mr. Norbeck reported that if this were true, it would be 1997 before all the hearings are held.

(g) In opposing any tort reform, the Trial Lawyers have said that they gave 2.4 million dollars to 383 candidates in 1992 and that they contributed $481,000 to Clinton and only $75,000 to Bush and expect that they will have great influence.

(h) Mr. Norbeck reported that at the Washington meeting, he sat with Larry Joyce, who is the AMA Director of Communications, and he told him that very morning he was watching CNN and saw his son shaving in Somalia. His son, James Casey Joyce was killed in Somalia one week later and photographs of his burial appeared on the front page of the Sunday New York Times.

Mr. Norbeck's report was accepted as information and the Council VOTED to send a letter of condolence to the Joyce family on the loss of their son.

Nominations for Directors of CPRO BOARD

It was VOTED to confirm the nominations of Drs. Beck and Sosa for election to the CPRO Board, which were made by the President, due to a deadline that had to be met.

Communication from
New London County Medical Association

It was VOTED to support a request from the New London County Medical Association's Board of Trustees to support "Any Willing Provider" legislation in the 1994 session of the Connecticut General Assembly. The communication stated that the NLCMA Board supported this legislation to promote non-discrimination by HMOs in the state.

Public Education Campaign

At the last Council meeting, it was VOTED to approve the recommendation of Dr. Wetstone that an Ad Hoc Committee to develop a pro-active program to improve the image of the physicians be appointed. The President-Elect, Vice President were appointed co-chairpersons, who would select additional members for the committee. A written, comprehensive plan of action was distributed to members of the Council which included a membership survey, developing a media contact list, formal speaker's bureau and training program, Op-Ed articles for various newspapers, statewide media dinner, develop multi-use media kits, public service announcements, etc. The total estimated cost of this project was set at approximately $42,000. It was VOTED to approve the project and the funds would come from the $100,000 that was set aside for the health care reform activities.

Unified Membership

It was VOTED to congratulate the Fairfield County Medical Association on its leadership in adopting unified membership at its recent semi-annual meeting.

Section on Preventive Medicine

It was brought to the attention of the Council by Elihu York, M.D., that the Section on Preventive Medicine had been inactive. This section had been previously merged with the Section on Occupational Health, however, no meetings have been called by the chairman. It was VOTED to reactivate the Section and to rename it the Section on Preventive and Occupational Medicine and that Dr. York be named Chairman. It was further requested that Dr. York be asked to submit his plans for the section to the Council.

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are requested to submit their papers to the JOURNAL for consideration by the Board of Editors for publication. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **INFORMATION FOF AUTHORS**. This material may be obtained from the Journal office. Adherence to the instructions will prevent delays both in acceptance and in publication. Any papers set on computer should be submitted on disk along with hardcopy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

The Rash is Not the "Bull's-Eye" in Lyme Disease Detection

Recent evidence shows tht the "bull's-eye" rash, a tell-tale symptom of Lyme disease, is not apparent in 40% to 50% of Lyme disease sufferers. This red, circular rash around the tick bite it considered a common early warning sign of this disease, but many patients either lack or overlook this symptom.

"It is important for people to understand that there are many early symptoms of Lyme disease in addition to the rash," explains Ray Hernandez, coordinator of The Lyme Care Center. "Symptoms such as fatigue, headache, neck stiffness, jaw discomfort, slight persistent fever and swollen glands also signal possible infection. The fact that a patient either doesn't develop or overlooks the "bull's-eye" rash does not necessarily mean they are not infected."

Lyme disease is a chronic infectious disease spread primarily from bacteria transmitted by the bite of certain tick species. It is difficult to diagnose due to the similarity of its symptoms to other illnesses such as the flu.

Treatment is most effective when diagnosed early, before the disease has progressed. In its progressive stages, Lyme disease sufferers may develop arthritic, neurological, or cardiac manifestations. Behavioral changes can also develop due to Lyme disease, such as mood changes, weight loss or gain, and sleep pattern changes.

Prevention is the best defense against Lyme disease. Light-colored clothing, long sleeves and pants, and a thorough tick check are recommended when in tick-infested areas.

For more information about Lyme disease, call The Lyme Care Center at 1-800-TICK-BITE. The Lyme Care Center is a division of HoMed Convalescent Equipment, Inc. The center serves as a complete resource group dedicated to the prevention and care of Lyme disease.

IN MEMORIAM

AMORE, FREDERICK R., University of Bologne, Italy, 1957. Dr. Amore maintained a private practice in internal medicine in New Haven from 1963 to 1971 and served on the medical staff of the Laurel Heights Hospital in Shelton from 1971 until his retirement in 1981. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Amore died 14 September 1993 at the age of 82.

BLANK, SAMUEL, Medical College of Virginia, 1941. Dr. Blank an Assistant Professor of Radiology at Yale University Health Services prior to his retirement in 1985, also served as an attending radiologist at St. Raphaels Hospital. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Blank died 2 October 1993 at the age of 78.

BUCHALTER, DANIEL JD., University of Michigan, 1963. Dr. Buchalter, a surgeon who specialized in ear, nose and throat medicine and facial surgery, prior to his retirement in 1991. He was chairman of the surgery department of the otolaryngology section at Middlesex Memorial Hospital. Dr. Buchalter was a member of Middlesex County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Buchalter died 27 September 1993 at the age of 54.

COPPETO, C. JAMES, Marquette Medical School, 1939. Dr. Coppeto was a general practitioner in Waterbury for more than 40 years, and for several years, a member of the surgical staff of Waterbury Hospital. He was a member of New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Coppeto died 1 September 1993 at the age of 81.

COSHAK, MORRIS, Boston University, 1937. Dr. Coshak practiced internal medicine in the Waterbury area and was an attending physician at St. Mary's Hospital prior to his retirement in 1979. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Coshak died 15 October 1993 at the age of 81.

DAVIS, JACHIN B., Kansas Medical College, 1933. Dr. Davis practiced obstetrics and gynecology prior to his retirement in 1977. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Davis died 21 May 1993 at the age of 84.

DOWLING, KEVIN V., New York Medical School, 1957. Dr. Dowling was an orthopaedic surgeon and former chairman of orthopaedic surgery at St. Francis Hospital and Medical Center in Hartford. He was a trustee of the University of Connecticut since 1978 and was actively involved in the development of the UConn Health Center over the last 10 years. Dr. Dowling held leadership positions in health care groups throughout the state including chairman and founding member of Connecticut Medical Insurance of Connecticut and served on the board of directors of Hartford County Medical Foundation. He was a member of the Hartford County Medical Association, where he served as president from 1980 to 1981, Connecticut State Medical Society, and the American Medical Association. Dr. Dowling died 25 October 1993 at the age of 61.

GRISWOLD, DOUGLAS M., Boston University Medical School, 1965. Dr. Griswold was an orthopaedic surgeon with the Windham Orthopaedic Surgical Group. He was also an attending orthopaedic surgeon at the Windham Community Memorial Hospital where he served as chief of staff from 1986 to 1987 and chief of medical staff from 1988 to 1989. Dr. Griswold was a member of Windham County Medical Association, Connecticut State Medical Society and the American Medical Association. Dr. Griswold died 5 October 1993 at the age of 54.

SAYERS, JOHN J., Tufts University School of Medicine, 1935. Dr. Sayers practiced family medicine in Hartford county for more than 50 years prior to his retirement in 1991. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Sayers died 2 October 1993 at the age of 85.

THOMAS, ANDREW H., Duke University, 1942. Dr. Thomas practiced orthopaedic surgery at Manchester Memorial Hospital for more than 30 years and was a volunteer surgeon on the staff of Newington Children's Hospital. For 21 years, he was head of the Norwich Community Clinic for the Disabled. Dr. Thomas was a member of Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Thomas died 6 September 1993 at the age of 76.

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References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical Letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Fairfield County's First Executive Dead at 82

Arnold P. Olson, Sr., 82, passed away (in Charlottesville, Virginia) on September 12, 1993, after a long illness. Mr. Olson will be remembered for his twenty-one years of service as the Executive Director of the Fairfield County Medical Association. He retired in 1975 and moved shortly thereafter to Charlottesville.

After graduating from Bridgeport Central High School and the Junior College of Connecticut, he became a newspaper reporter, covering trade and professional organizations. At one time he had his own advertising and public relations firm. This experience was applied to his organizing Fairfield County's first full time staff and publishing "News Capsule," which continues as FCMAs major communication vehicle to its membership. He was also one of the charter members the American Association of Medical Society Executives.

Mr. Olson was also an avid golfer and was responsible for organizing numerous golfing events for FCMA physicians. A Rotarian since 1939, he served as president and secretary of the Fairfield Club.

Survivors include his wife of 56 years, Blanche Martin Olson, a son, a daughter and a grandson.

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

FAMILY PRACTICE

Available October 1, 1993. Age 73. Licensed in Connecticut and Massachusetts. Passed National Boards. American Board Certified. M.D. at Faculty of Medicine/University of Zurich in Switzerland. Internship at New York City Hospital. Residency at Meriden-Wallingford Hospital. Extensive medical-in clinic type experience. Thirty-six years medical/family practice and hospital experience. Please respond to: Harold Gregory Plakins, M.D., 180 Longhill Road, Wallingford, CT 06492.

Available July 1994. Age 39. Licensed in Wisconsin. Passed FMGE exam. American Board eligible. M.D. at Far East University. Internship and Residency at Wausau Hospital. Would like to join a group (HMO) practice in Connecticut. Please respond to: Cynthia P. Gillego Jordan, M.D., 1010 Grand Avenue, Apt. 201, Wausau, WI 54403-7911.

Available January 1994. Age 35. Licensed In Alberta, Canada. M.D. at University of Alberta, Edmonton, Canada. Internship at Dalhousie University Halifax, Nova Scotia, Canada. Spent three years in Pathology related research and 13 months training in the Bronx, New York. Would like to join an associates group in a large or medium sized community in Connecticut. Please respond to: Amba Balu, M.D., #59, 27 Silver Springs Drive NW, Calgary, Alberta, Canada T3B4N3.

GASTROENTEROLOGY

Available Immediately. Age 33. Licensed in Connecticut. Passed National Boards. American Board Certified. M.D. at Boston University. Internship and Residency at St. Elizabeth's of Boston (Tufts). Would like to join any type of practice—prefer predominantly GI. Strong clinical and procedural background including therapeutic ERCP, extensive experience teaching students, residents and fellows. Excellent professional and doctor-patient relations. Please respond to: CSMS c/o GI/AL.

Available July 1994. Age 30. Licensed in New York. Passed National Boards. American Board Certified. M.D. at New York School of Medicine. Internship and Residency at Mount Sinai Hospital. Would like to join a group practice in Connecticut. Please respond to: CSMS c/o GA/MR.

GENERAL PRACTICE

Available at any time. Age 47. Licensed in Florida and Connecticut. Passed National Boards. M.D. at Autonomous University Guadalajara, Mexico. Internship at Victoria Pulbic Hospital. Residency at Texas Tech Medical School. Would like to join a group, associates, industrial or institutional practice in Connecticut. Please respond to: Ira H. Liss, M.D., 7407 State Road 52, Hudson, FL 34667.

GENERAL SURGERY/VASCULAR SURGERY

Available July 1994. Age 28. Licensed in District of Columbia. Passed National Boards. American Board eligible. M.D. Columbia University/College of P & S.

Internship and Residency at Washington Hospital Center. Special interest in breast surgery. Would like to join a group, associates or partnership practice in a large community in Connecticut. Please respond to: William Dean Adams, M.D., 3617 38th Street, NW #310, Washington, DC 20016.

INTERNAL MEDICINE

Available July 1994. Age 31. Licensed in Connecticut. Passed National Boards. M.D. at New York College of Osteopathic Medicine. Internship at Massapeaua General Hospital. Residency at Norwalk Hospital—Yale School of Medicine. Would like to join a group, associates or institutional practice in Connecticut. Interests in Cardiology, Pulmonary Medicine and Sports Medicine. Please respond to: CSMS c/o IM/MS.

Available July 1994. Age 31. Connecticut license in progress. Passed National Boards. American Board eligible. M.D. at University of Cincinnati. Internship and Residency at Dartmouth-Hitchcock Medical Center. Would like to join a group, associates or institutional practice in Connecticut. Please respond to: Anne C. Koss, M.D., 23 Terrace View, Lebanon, NH 03766.

INTERNAL MEDICINE/CARDIOLOGY

Available immediately. Age 36. Board Certified Cardiologist seseking to provide practice coverage. Available to cover weekends or to see office patients on weekday evenings for Internal Medicine or Non-invasive Cardiology practice. American born and trained. Excellent references will be provided. Please respond to: CSMS c/o IM/KS.

OB/GYN

Available August 1994. Age 32. Licensed in Ohio and New York. Passed Flex exam. American Board eligible. M.D. at Case Western Reserve University. Internship and Residency at MetroHealth Medical Center in Cleveland. Would like to join a group or associates practice in a medium or small community in Connecticut. Please respond to: Michael L. Arnold, M.D., 2332 Charney Road, University Hts., Ohio, 44118.

ORTHOPEDICS

Available July 1, 1994. Age 45. Licensed in New York. Passed National Boards. American Board certified. M.D. at Downstate Medical School. Internship and Residency at Kings County Hospital. Would like to join a practice in Connecticut. Please respond to: Harvey Manes, M.D., 20 Treeview Avenue, Melville, NY 11747.

PSYCHIATRY

Available September 15, 1993. Age 38. Licensed in Connecticut and New York. Passed National Boards. American Board eligible. M.D. at Yale University. Internship at Stanford University Hospital. Residency at McAuley Neuro-Psychiatry Institute in San Francisco, California. Especially interested in adolescent psychiatry and residential long-term treatment. Would like to join a solo practice in Connecticut. Please respond to: Dennis D. Banks, M.D., P.O. Box 1012, Washington, CT 06793.
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BC/BE Internist w/wo subspecialty to join three primary care physicians in New Haven. Academic teaching opportunities. Initial salary with the hope of partnership. Send CV or call: Wayne S. Warren, M.D., 1308 Chapel Street, New Haven, CT 06511. Phone: (203) 865-5111.

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OB/GYN

Our group of three men and two women is looking to add an additional partner in the summer of 1994. Office consists of large addition on 1750 home with six fireplaces on two acres. Hospital has new LDRP unit opening January, 1994. Practice offers competitive salary and benefits, including health insurance, malpractice insurance, retirement program, seven weeks vacation plus meetings per year, and full and equal partnership in only one year. Direct inquires and CV to Robert E. Crootof, M.D., 17 Case Street, Norwich, CT 06360. Telephone: (203) 886-2461.

PEDIATRICS

BC/BE pediatrician to replace relocating member of a two-person practice in south central Connecticut. Position available July 1, 1994. Competitive salary first year, followed by opportunity for partnership. Excellent cross-coverage. Preference given to university-trained U.S. medical school graduate. Please send CV to: CSMS c/o PD/DG.

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New Haven area Rheumatologist seeking associate to work part-time in 100% Rheumatology practice. Please respond to: CSMS c/o RH/DD.

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Information for Authors

Manuscripts

Manuscripts should be submitted to **Robert U. Massey, M.D., Editor, CONNECTICUT MEDICINE,** 160 St. Ronan St., New Haven, CT 06511, **in original and one duplicate copy.** The author should retain another copy for his records. A covering letter should identify the person (with the address and telephone number) responsible for negotiations concerning the manuscript; the letter should make it clear that the final manuscript has been seen and approved by the authors.

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Manuscript Preparation

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1. Jones J: Necrotizing *Candida* esophagitis. *JAMA* 1980;244:2190-1.
2. Kremer H, Kellner E, Schierl W, et al: Ultrasonic diagnosis in infiltrative gastrointestinal diseases. *Dtsch Med Wochenschr* 1978;103:965-6. Abstracted, *JAMA* 1978;240:2784.
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4. Fischer DH: *Growing Old in America.* New York, Oxford University Press, 1977, pp 210-6.

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Screening Mammography: The Mount Sinai BreastCheck Experience

HAROLD MOSKOWITZ, M.D., ELINOR KRON, M.D.,
AND DOROTHY HALL, R.T.R.M.

ABSTRACT—Early detection can result in a decrease in the death rate from breast cancer. Screening mammography is the most important modality available to discover early so-called "minimal" cancer. In an effort to make screening mammography more available to the women of north central Connecticut, Mount Sinai Hospital, a community based, university-affiliated hospital initiated a screening program five years ago. During the four-year interval on which we are reporting, we have screened almost 15,000 women using a mobile van. Seventy-seven cancers were discovered in this screened population, with a detection rate of five cancers per 1,000. Our biopsy rate was 1.5% with a positive predictive value of 34%. Sixty-one percent of the tumors discovered were so-called "minimal" cancers and only 12 of the 77 patients had positive lymph nodes.

IN 1993 approximately 186,000 women in the United States will be diagnosed with breast cancer. Breast cancer is the second leading cause of cancer death in American women, and approximately 48,000 women will die of this disease this year.[1] In the majority of these cases, the cancer will present as a palpable mass, usually found by the patient.[2]

Reduction in breast cancer mortality depends on early detection and treatment. Mammography and breast self-examination (BSE), coupled with yearly physical examinations by a physician, offer hope for improvement in these mortality statistics. If a tumor is discovered by mammography and is not palpable, it is small and most often has not spread beyond the breast. These so-called "minimal" or "early stage" tumors have a significantly improved prognosis and discovery of this type of tumor has substantially increased the five and10-year survival figures.[3]

Mammography is the method most often responsible for the discovery of "minimal" tumors.[4] It has been hoped that an intensive public education campaign regarding breast cancer would result in increased acceptance and utilization of self-examination and regular screening mammography, eventually leading to earlier detection and increased survival. Yet, both women and physicians have been slow to adopt screening mammography.[5]

The apparent incidence of breast cancer has been steadily increasing in the past 50 years.[6] Increases have occurred in all age groups, but have been greatest among older women and premenopausal black women. One explanation for the apparent increased incidence of breast cancer may be the earlier diagnosis by mammography of tumors measuring less than 2 cm in size and *in-situ* cancers.

While the initial implementation of a screening program results in a transient apparent rise in incidence, there should eventually be a decrease in the number of deaths, owing to early diagnosis. Mortality figures have remained fairly constant in the past 20 years, but we must remember that stable mortality rates in the face of a true increase in incidence is an improvement. Treatment advances have also improved survival, also offsetting the rising incidence.

Early studies revealed that physicians were reluctant to recommend screening mammography.[7] Educational programs for physicians resulted in increased patient referrals. In spite of the significant percentage of women prac-

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HAROLD MOSKOWITZ, M.D., F.A.C.R., Director, Radiology-Imaging, Mount Sinai Hospital, Hartford; ELINOR KRON, M.D., Director, BreastCheck Mobile Mammography Program, Mount Sinai Hospital, Hartford; DOROTHY HALL, R.T.R.M., Coordinator, Breast-Check Mobile Mammography Program, Mount Sinai Hospital, Hartford.

Table 1.—Total Number of Patients and Cancers

	Patients	Cancer	Biopsy	Biopsy %	Cancer %	Rate/1,000
BreastCheck 6-month	2,230	14	44	1.7%	32%	6.3/1,000
BreastCheck 4-years	14,895	77	225	1.5%	34%	5.0/1,000

ticing breast self-examination, less than 50% of age-eligible women follow the recommendations of the American Cancer Society for routine mammography.[8]

Recent campaigns have encouraged women to refer themselves to breast cancer screening clinics. However, even when offered the opportunity to undergo mammography in a setting where cost barriers are decreased, many women still do not avail themselves of this potential life-saving modality. In an effort to decrease cost and increase utilization of screening mammography, Mount Sinai Hospital initiated the BreastCheck program five years ago. Mount Sinai Hospital is a 200-bed community based, university-affiliated hospital with a long history of commitment to outreach programs and to primary care, especially for the population of the north end of Hartford.

BreastCheck is a breast health program utilizing a 34-foot van to bring optimal "state of the art" mammographic screening to the women of north-central Connecticut. The van, equipped with a dedicated mammographic unit, goes to various business sites, factories, health fairs, senior centers, or shopping malls. Women can be self-referred or referred by a physician. A two-view screening mammogram is accomplished on the coach at a charge of $70. When the program began five years ago, the charge for a mammogram was $55.

Films are brought back to Mount Sinai Hospital and are batch processed and batch read. Reports are computer generated and a computer tracking and results program is utilized to obtain follow-up of the statistical data relating to our results and experience.

BreastCheck obtained its first American College of Radiology accreditation in November 1988 and was reaccredited in the first part of 1992. Our first six months' experience was described in *Connecticut Medicine* in February 1989, and we are now reporting statistics and results from our first four years of operation.[9]

In four years of operation, we performed 14,895 mammograms. Seventy-seven cancers were discovered in this screened population, a detection rate of five cancers per 1,000 examinations. This correlates well with the national average of 4.6 cancers per 1,000 women derived from the National Breast Cancer Detection Project and other studies.[10] Our rate is calculated as number of cancers/1,000 examinations, but since many women have had repeat mammograms on the coach during the past four years, the rate calculated as number of cancers/1,000 women would be higher. This would also explain why the detection rate has decreased slightly from our initial six-month figures to those for our four-year study. Our biopsy rate was 1.5%, with 34% of the lesions biopsied being cancers, and our positive predictive value is 34%. These statistics compare favorably with the best national studies (Table 1).

The true incidence rate of cancers may be higher, but we have included in our statistics only those definitely diagnosed and surgically proven. At times, tracking patients is difficult since some physicians will not release any information regarding their patients without the patient's consent. Our van travels in a 60-mile radius of Hartford and many patients are cared for by physicians and surgeons in distant hospitals, making communication and follow-up difficult, and at times, impossible. Five patients who had suspicious lesions by mammogram have seen surgeons, but refused to release any information regarding their status to our follow-up inquiries, and are thus not counted as cancers in our statistics.

Nineteen or 25% of the 77 patients had a positive family history for breast cancer. Thirty-nine of the 77 patients with breast cancer had previous mammograms, but Table 2 reveals that less than half of these patients were following the American Cancer Society's screening guidelines. Most of our patients had not had a mammogram in the previous two years. The age distribution of our patients followed national statistics. The largest number of cases occurred in the 60-69 age group (Table 3).

Table 2.—Number of Patients with Cancer Who Had Mammograms

Patients	Previous Mammograms
2	< 1 year
13	1 - 2 years
10	2 - 3 years
5	3 - 5 years
9	> 5 years

Table 3.—Age Distribution of Patients with Carcinoma

Age	Patients
40-49	11
50-59	15
60-69	25
70-79	16
80-89	10

Table 4.—Breast Cancer Presenting as Calcifications Only

Tumor Type	Patients	Positive Lymph Nodes
Intraductal	11	0
Multifocal intraductal	3	0
Infiltrating ductal	5	0
Lobular carcinoma *in situ*	1	0
	20	0

Analysis of our 77 cancers revealed that in 20 patients calcification was the only marker of breast cancer (Table 4). Eleven of these patients had intraductal carcinomas, five had infiltrating ductal carcinomas. There were three multifocal intraductal carcinomas and one lobular carcinoma *in situ*. Of these cases with calcification only, all 20 had negative lymph nodes. In 57 patients, the lesion presented as a radiographically detectable mass, some with and some without calcification.

In the 57 patients with masses, three had colloid carcinomas and the other 54 patients had infiltrating ductal carcinomas not otherwise specific (NOS). There were positive lymph nodes in one of the cases of colloid carcinoma and in 11 of 59 patients with infiltrating ductal carcinoma. Thus only 12 patients of the 77 with cancer or 16% (Table 4) had positive lymph nodes.

The requirements for mammography on the coach bar any woman with symptoms or a mass from having a mammogram on the van. In spite of the admonition that no patient with a finding of a breast lump should be admitted to our coach, nine of the 57 patients with radiographically detectable masses had tumors greater than 2 cm. Some of these women may not have performed BSE or may not have seen their physicians for breast examination. Several patients told the technologists after completing the examination that they had felt a mass. This may be a factor in any statistics relating to a screening population. Forty-eight of 77 patients, or 61%, can be classified as minimal breast cancers, according to the Gallager criteria.[11]

During the past four years, interval carcinomas were detected in six patients. Four of these cancers were "minimal breast cancers." Two patients had tumors over 1 cm in size, with one 2.5 cm in size. All six patients had negative lymph nodes. The interval between mammographic studies ranged from six months to three years with an average time of 1.7 years between a mammogram and the discovery of the tumor.

Conclusion

In four years of operation, BreastCheck, our mobile mammographic program, has screened 14,895 patients and discovered 77 breast cancers. Only 16% of patients had positive lymph node involvement and 61% fell into the criteria of minimal breast cancer.

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Table 5.—Breast Cancer Presenting as Masses

Tumor Type	Tumor Size	Patients	Positive Lymph Nodes
Colloid	< 1 cm	2	0
	2.5 cm	1	1
Infiltrating ductal	<1 cm	15	2
	1 cm	10	2
	1.5 cm	12	
	1.5 - 2 cm	8	2
	> 2.0 cm	9	4
		57	12

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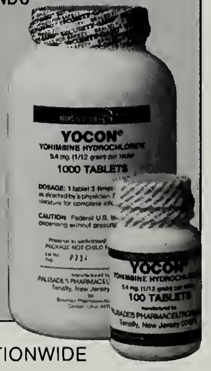

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Abstracts: Danbury Hospital Seventh Annual Research Day

DANBURY HOSPITAL

Introduction

It was an honor to have Dean Eugene Sigman, M.D., University of Connecticut School of Medicine speak on "Medical Education: ? an Oxymoron." Dr. Alfred J. Bollet was Chairman of the Program Committee.

Ongoing Evaluation of Questionnaire (Q) for Exercise Asthma in Children

CHRISTOPHER RANDOLPH. M.D., Waterbury
MARTIN RANDOLPH, M.D.
BARBARA FRASER, L.P.N., Waterbury

PURPOSE: To determine the incidence of exercise-induced asthma in children by age-related questionnaire and free running athletic screening test (FRAST).

SUBJECTS: We screened 855 children with an average age of 11 years for exercise asthma in four settings: Four hundred fifty-two (50%)were screened in a general pediatric practice of one of the authors (MR). Two hundred fifteen (24%) were in a preparticipation high school setting. One hundred fifty (17%) were screened in a private allergy practice (CR). Eighty-one (9%) were screened at a Y.M.C.A. summer camp.

RESULTS: Twenty-five percent (222/898 children) answered (+) to exercise-related symptoms on the Rice and pediatric-modified (Q) consisting of 1) allergy, 2) pulmonary, 3) exercise-related symptoms. Four percent (39) had low peak flow, < 80% of average for age. Of these 222 candidates (+) by Q, 105 (48%) agreed to FRAST conducted in the office corridor. Thirty percent (31/105) had (+) (Q) with (+) FRAST as defined by > 15% decline in PFTs with 20% increase following Albuterol bronchodilator. These results indicate a 13.5% incidence of exercise-induced asthma consistent with studies that report 12%. Fifty -seven percent of patients had (-) FRAST and (+) (Q). Thirty-two percent had (-) FRAST and (-) (Q). Twenty-five percent had better than a 20% improvement with (-) FRAST and (+) (Q).

CONCLUSION: The free-running test FRAST had a specificity of 70% and a sensitivity of 54%. The reproducibility of FRAST was only 75%. Correlation of the free-running test with the questionnaire was .03 with a *P* value of .03 with (-) controls. Thus, neither the free-running test nor the questionnaire alone was sufficient to define exercise-induced asthma in all patients.

All authors are at Danbury Hospital in addition to other institutional and departmental affiliations indicated.

Blood Lead Levels in Danbury Area Preschool Children

THOMAS F. DRAPER, M.D., M.P.H.
Department of Pediatrics and Office of Community Medicine

Lead is a poison that affects virtually every system of the body. Children are considered to be more at risk for lead exposure than adults. Our understanding of childhood lead poisoning has changed substantially over the last 20 years. It is now recognized that large numbers of children in the United States continue to have blood lead levels in the toxic range.

The blood lead levels in children under age six years attending the Danbury Hospital Pediatric Health Center and those referred from the Hanahoe and Visiting Nurse Clinics were evaluated over a two-year period 1989-91; 1,087 samples were determined. The results will be reported and compared to national data. The problem of environmental lead exposure and the Danbury program of minimizing risk will be discussed.

Assistant Professor Pediatrics, University of Connecticut School of Medicine.

Blood Lead
September 1989 through October 1991

Total Tests: 1,087

Lead Concentration	**<12 mos.**	**12<24 mos.**	**24<36 mos.**	**>36 mos.**
(μg/dL)	(N) %	(N) %	(N) %	(N) %
<10	(63) 97%	(204) 76%	(152) 74%	(481) 85%
10-<15	(2) 3%	(43) 16%	(31) 15%	(59) 10%
15-<20		(7) 3%	(13) 6%	(16) 3%
20-<30		(3) 1%	(6) 3%	(7) 1%
>30		(4)1.5%	(2) 1%	(1).02%
Total	**(65)**	**(261)**	**(204)**	**(564)**

Children 6-72 mos.

Lead Concentration	**N**	**%**
<10	(900)	82.3%
10-<15	(135)	12.5%
15-<20	(36)	3.3%
20-<30	(15)	1.4%
>30	(7)	.7%
Total (1,087)		

Left Ventricular Regional Scoring Systems by Echocardiography: How Many Segments Need to Be Scored

ERIC J. BUSH, M.D. AND ANDREW M. KELLER, M.D.
Department of Medicine

Important clinical information can be obtained from echocardiography using a visually scored regional wall analysis (RWA) protocol. However, the total number of segments to score as normal or abnormal appears to have been arbitrarily delineated (with scoring protocols using 10 to 20-segments). Accordingly, we applied a 14-segment RWA system to 26 patients with a prior history of ischemic heart disease who underwent cardiac catheterization. RWA was scored as normal or abnormal and then analyzed using a 14 by 14 cross correlation matrix. Concordance was identified in six segments ($R>0.9$, $P < 0.05$), four in the left anterior descending artery (LAD) territory, and two at the apex. Segmental abnormalities were also compared to the coronary anatomy using the presence of a 70%, or greater stenosis as the basis for comparison. No consistent relation was identified between the location of stenotic coronary lesions and the distribution of abnormal RWA in the 10-segments. We conclude that as few as 10-segments can be used to adequately characterize the segmental abnormalities of the left ventricle in patients with ischemic heart disease; however, a poor relation remains between the location of these 10-segmental abnormalities and the abnormalities seen in the coronary arteries.

The Airway Resistence / Negative Respiratory Force Ratio Predicts Ventilator Dependence in Patients with COPD and Hypercapneic Respiratory Failure

CARLOS A. VAZ FRAGOSO, M.D. AND FRANK SALVATORE, R.R.T.
Section of Pulmonary Medicine

In severe chronic obstructive pulmonary disease (COPD), acute hypercapneic respiratory failure (AHRF) may result in prolonged mechanical ventilation (MV). To date, only the premorbid activity level has predicted duration of MV. These studies, however, did not evaluate all measurements of lung mechanics. We, therefore, prospectively evaluated nine patients with severe COPD who developed AHRF, required MV, and were extubated. Gas exchange, dynamic and static compliance (Cdyn, Cstat), total expiratory minute ventilation (VE), and airway resistance (Raw) were determined daily, while the maximal negative inspiratory force (NIF) was assessed on the planned day of extubation (DE). The results are as follows: The premorbid FEV^1 was 0.67±0.20 L and the number of ventilator days (VD) was 11±9. Prior to intubation, the Paco$_2$ was 88±14 torr with a pH of 7.23±0.07. On the first day of intubation (D1), the VE x Paco$_2$ was 529±175; Pao$_2$/Fio$_2$ was 217±49; Cdyn and Cstat (cc/cm H$_2$0) were 30±11 and 52±22, respectively; and the Raw was 13.7±3.3 cm H$_2$0/L/sec. On the actual DE, these showed no significant changes ($P>0.1$). Furthermore, only the Raw/NIF on the DE correlated with the number of VD ($r=+0.94$, $P=.0002$).

In conclusion, patients with severe COPD and AHRF show no significant improvements in gas exchange or compliance during MV. Only the Raw/NIF correlates with the number of VD suggesting that respiratory muscle rest is perhaps the predominant intervention.

Varicella Prophylaxis with Intravenous Immunogammaglobulins in Patients with Immunodeficiencies

JACK S. C. FONG, M.D.
Department of Pediatrics

Viral infestations are among the most common and debilitating opportunistic infections in patients with acquired immunodeficiency syndrome (AIDS). Since virtually all children develop varicella during the childhood years, immunodeficient pediatric patients are particularly at risk of developing this illness through contact exposure. With the use of intravenous immunoglobulin (IVIG) for immunodeficient pediatric patients, the specific prophylactic value of this therapy against varicella is studied.

Two pediatric AIDS patients and two Bruton's agammaglobulinemia patients are entered into the study. Prior to the IVIG therapy, their sera showed no anti-varicella zoster antibody titer. These patients were given monthly infusions of 400 mg of IVIG/kg for more than one year. The mean trough level of 11 antivaricella zoster antibody determinations immediately prior to an infusion was 0.31 (range 0.18 - 0.45) enzyme immunoassay units (EIA) units. The normal immune range is 0.15 - 0.79 EIA units. During the treatment period of these four patients for six years (range one to 10 years), numerous contacts with varicella infected children were noted. Only one AIDS patient of the four in the study group developed mild case of varicella. No acyclovir or any other therapeutic intervention was given to this patient who recovered uneventfully.

Results of this study suggest that IVIG therapy at 400 mg/kg/month protects immunodeficient patients, who are at risk through contact exposure, against the development of varicella. This protection conferred by IVIG therapy enables AIDS children to attend all school activities without the threat of debilitating varicella infection.

Associate Clinical Professor, Department of Pediatrics, Yale University School of Medicine.

Survey of Incidence of Latex Allergy in Connecticut Hospitals

CHRISTOPHER RANDOLPH, M.D. GARY SCHLEITER, M.D.,
BARBARA FRASER, L.P.N., AND MICHELE SQUILLANTE

The prevalence of latex allergy among hospital employees is known to be 5-10%. We distributed a questionnaire (Q) to 1,500 of 4,000 employes in three Connecticut hospitals. Twenty-eight percent (423) were completed. Thirty-five percent (140) had the following presentations: Ninety-eight (70%) had contact dermatitis, 15 (11%) hives and angioedema, 40 (29%) had upper respiratory symptoms, 15 (11%) lower respiratory symptoms, 40 (29%) had multiple-system involvement. Twenty-one percent (30) of responders had a history of atopy. Forty-four percent (42) noted the setting of reaction: Nine (6%) in clinical laboratory, six (4%) in an operating room, 13 (9%) in a delivery room, two (1.4%) in the pediatric clinic, three (2%) in a gastroenterology clinic, one each (1%) in physical therapy, telemetry, radiology, and dental clinic, 24 (17%) in an intensive care unit, and 18 (13%) in amedical/surgical ward.

Treatment of 42 patients (30%) was topical corticosteroids; six (4%) used hand lotions and gloves; 14 (10%) used hand washing and avoidance; nine (6%) used antihistamines; 18 (13%) used new gloves and/or liners; five (4%) used systemic steroids; two (1.4%) required a metered dose inhaler and nasal corticosteroid; five (4%) consulted with a dermatologist; three (2%) had latex or rubber skin tests.

The results of this survey indicate that 37% of individuals with latex allergy are symptomatic in a variety of laboratory, clinic, or inpatient settings.

Assistant Clinical Professor of Pediatrics at Yale and University of Connecticut(Dr. Randolph) ; Assistant Clinical Professor of Medicine at Yale (Dr. Schleiter).

Effect of Long-Term Diabetes Mellitus on Bone Mass: A Quantitative Study

LUIS F. ANEZ, M.D., SHIV M. GUPTA, M.D., WILLIAM JOHNS, M.D.,
JOSEPH L. BELSKY, M.D., AND TOM DAVIES
CNMT, Divisions of Nuclear Medicine and Endocrinology

Although some studies in the past have suggested an adverse effect of diabetes mellitus on the integrity of bone metabolism, the availability of newer techniques have made it possible to quantify bone mass in such patients. Determination of bone mass by single and dual beam absorptiometry was performed in 31 patients to evaluate for osteopenia. The study included 28 females and three males (average age, 49 years). The patients were divided into three categories according to type of diabetes: category I, insulin dependent (14 patients); category II, noninsulin dependent (11 patients); and category III, mixed I/II disease (six patients). The average duration of diabetes was eight years at the time of bone mass measurement.

Analysis of density studies showed that 80% of the patients in category I had significantly reduced bone mass and 43% had sustained fractures. In category II, bone mass was also reduced in 80% of patients, and 36% of these had fractures. In category III, bone mass was abnormal in 50% and fractures were documented in 50% of these patients. Of particular interest was the presence of osteopenia in young premenopausal, insulin-dependent patients, with an average age of 30 years, which was comparable to those patients with average ages of 61 years in category II and 76 years in category III. This finding tends to confirm the presence of osteopenia in patients with diabetes mellitus and the possible protective effect of insulin in type disease.

In conclusion, osteopenia is widely prevalent in patients with long-standing types I and II diabetes. The loss of bone mass is most likely related to underlying disease and not the need for insulin alone. Bone densitometry is a simple, sensitive, and noninvasive means to study such patients and can be employed to provide better management and as a prognostic indicator.

Associate Clinical Professor (Dr. Gupta), University of Connecticut School of Medicine; Assistant Clinical Professor (Dr. Johns), University of Connecticut School of Medicine; Clinical Professor (Dr. Belsky), Yale University School of Medicine.

Comparison of Diagnostic Dose and Post-therapy Radioiodine Whole Body Scans in Detection of Metastatic Thyroid Carcinoma

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Though some reports have indicated significant discordance between routine low-dose diagnostic ^{131}I whole body scans and those following large therapeutic doses in patients with metastatic thyroid carcinoma, controversy still exists about the role of post-therapy scanning in such patients. In order to establish the usefulness of routine post-therapy imaging, whole body scans with diagnostic (5-10 mCi) and therapeutic (75-200 mCi) doses performed on 22 patients with thyroid carcinoma between January 1989 and February 1992 were compared. Six of the patients had follicular carcinoma, 14 had papillary carcinoma, and two had mixed papillary and follicular carcinoma. There were 17 females and five males in the age range of 18 to 68. A total of 72 studies (43 post-therapy and 29 diagnostic dose) were compared. Findings on these studies were compared in respect to presence and location of metastases and any difference in focality and intensity of metastases.

In 15 patients, both studies were negatives. In three patients, metastases were present in both studies, with similar findings. In four patients (16%), the post-therapy scans showed additional findings: in one patient, metastases were found only in post-therapy scans; in two patients, additional metastatic sites were seen in the post-therapy scan and in the fourth patient, bilateral lung metastases were seen rather than unilateral metastases as shown on the diagnostic study. In conclusion, the post-therapy scans can detect additional metastatic sites and should be performed following administration of ablation or therapeutic doses of radioiodine to patients with thyroid carcinoma.

Associate Clinical Professor, Nuclear Medicine, University of Connecticut Health Center, (Dr. Gupta); Clinical Professor, Yale University (Dr. J. L. Belsky).

Elevated Levels of Maternal Serum Alpha-fetoprotein and Cell Adhesion Molecule-1 in Amniotic Fluid at 16 Weeks May Mark Early Intrauterine Inflammation

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Elevated maternal serum alpha-fetoprotein (MSAFP) levels at 14-16 weeks is associated with increased risk of poor outcome for the sructurally normal fetus. We have identified an increased incidence of chronic placental inflammation (villitis) in cases of growth retardation associated with midtrimester elevated MSAFP. Cell adhesion modecule-1 (clCAM-1) is a marker of inflammatory responses present in serum in increased levels in hepatic and cardiac allograft rejection. clCAM-1 is present in low levels in amniotic fluid when MSAFP is normal in the midtrimester (36.8 pg/mL ± 8.0, n = 40) and was significantly elevated in association with elevated MSAFP (132.6 pg/mL ± 33, n = 20, T = 3.84, $P<.05$). To test whether clCAM-1 marks subtle inflammatory processes which may induce increases in placental membrane permeability and lead to elevated MSAFP, 33 paired samples of maternal sera (MS) and amniotic fluid (AF) from the Yale AFP Program were obtained and gradients between maternal sera and amniotic fluid levels of IgG and albumin were calculated. A linear relationship between decreasing mean albumin gradients and mean IgG gradients between maternal serum and amniotic fluid was observed with increasing AF-clCAM-1, suggesting that clCAM-1 was associated with increased membrane permeability. However, no relationship between (MS-clCAM-1) and (AF-clCAM-1) was detected. These data suggest that (AF-clCAM-1) did not originate from the maternal serum. Furthermore, the presence of a significant decrease in diffusion gradients of IgG and albumin between maternal senum and amniotic fluid suggests that (AF-clCAM-1) may mark a chronic intrauterine inflammation which changes membrane permeability and permits the increased feto-maternal passage of AFP. This chronic inflammation may reflect congenital infection or results of local maternal fetal immune interactions.

Assistant Professor, Pathology (Dr. Salafia) The University ot Connecticut School of Medicine; Associate Clinical Professor, Obsteric-Gynecology (Dr. Silberman) Yale University School of Medicine.

The Relationship of Insulin-like Growth Factors and Insulin-like Growth Factor Binding Proteins to Fetal and Placental Growth in Umbilical Cord Sera at Danbury Hospital

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Insulin-like growth factors have been shown to stimulate cellular proliferation; their binding proteins (BPs) may provide regulation of insulin-like growth factors (IGF) activities. Direct evidence for a role(s) of IGFs with intrauterine growth has only recently been observed in a mouse model of intrauterine growth retardation (IUGR). Both IUGR and macrosomia are important clinical problems in the Danbury Hospital population. IUGR often occurs in the absence of clinical risk factors. More confusingly, macrosomia, a hallmark of "infants of diabetic mothers," most frequently with normal glucose metabolism as demonstrated by laboratory screening tests. We studied 44 term, single, liveborn infants with birthweights ranging from 2,420 g to 4,860 g. Clinical data, including major maternal physical and medical characteristics thought to influence fetal growth, were extracted from medical charts. Laboratory studies were performed without knowledge of fetal growth measures. Significant biochemical associations included: (1) increasing insulin-like growth factor-1 and insulin-like growth factor binding proteins-3 with increasing birthweight and placental weight and (2) IGF-2 and the proteins IGFBP-1 and IGFBP-2 were not associated with changes in fetal or placental growth. No association was found with any of the clinical parameters studied.

	Total	IGF-1	IGFBP-3
Birthweight <10th percentile	6	12.6±5	1448±153
Birthweight 25-75th percentile	27	47.8±8	1881±65
Birthweight ,90th percentile	11	59.9±12	2006±81
Placental weight (mean=590±122g)	28	50.3±8	1872±64
Placental weight -1 S D mean	7	14.4±5	1496±93
Placental weight +1 S D mean	9	57.1±15	2073±104
Gestational Age (mean=281±9days)	31	44.0±8	1851±68
Gestational age -1 S D mean	6	32.0±8	1657±136
Gestational age +1 S D mean	7	67.0±16	2031±76

	N	IGF-1	IGFBP-3		N	IGF	IGFBP-3
Diabetes	2	15±6	1825±95	No Diabetes	42	48±6	1855±57
abnl. 1°PC	9	35±9	1750±103	nl. 1° PC	29	45±7	1883±73
Cigarettes	11	33±8	1693±95	No Cigarettes	33	51±8	1907±63
Mat. Age <30	25	54±10	1874±76	Mat. Age >30	19	35±6	1826±79
Primiparous	14	55±13	1887±103	Multiparous	30	42±7	1838±65
Wt. Gain <30lb	14	34±10	1734±97	Wt.Gain ,30lb	28	54±8	1928±66
PPWt.<135lb	23	48±10	1838±75	PPWt.>135lb	17	46±9	1889±88

Conclusion

Clinical assessment of risk for both IUGR and macrosomia fail to detect infants with significant change of growth factor production and activity. Improved screening to detect these basic metabolic changes are required.

Assistant Professor (Dr. Salafia) The University of Connecticut School of Medicine.

The Relationship Between Work Personality, Social Adjustment, Demographic Variables, Psychiatric Symptoms, and Work Status in Persons with Schizophrenia

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Certified Rehabilitation Councilor

This research was designed to investigate the relationship between work personality, social adjustment, demographic variables, psychiatric symptoms, and work status in 140 schizophrenic outpatients at the Community Mental Health Center at the Danbury Hospital.

It was hypothesized that the work status of schizophrenic patients is related individually and collectively to work personality, social adjustment, and work-related demographic variables over and above psychiatric symptoms.

The Livingston Work Attitude Scale, Neff Meaning of Work Scale, Weissman Social Adjustment Scale, Symptom Check List Revised 1990 (SCL-90-R) , and a demographic questionnaire were used to assess the independent variables. Work status, the dependent variable, is defined as working in competitive employment, supported employment, and work therapy, or nonworking.

A discriminant function analysis using Wilks method was computed to assess prediction of group membership from psychiatric symptoms, work personality, social adjustment and demographic variables. Results indicated that demographic variables produced differences between groups which were statistically significant. The differences between the groups was not sufficient to provide statistical significance on the measures of work personality, social adjustment, and psychiatric symptoms.

Conclusions support the hypothesis that the demographic variables of age, highest grade achieved in school, years worked since mental illness, and total years worked provide sufficient differences between the groups to be statistically significant.

Clinical Instructor, Psychology at New York Medical College.

Glycosylated Hemoglobin in Diabetics Receiving Individual *vs* Intensive Counseling

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Diabetes is a chronic disease that requires active patient participation in the medical regimen in order to maintain glycemic control. Studies have demonstrated that patients improve glycemic control after attending diabetes management courses. Few studies have demonstrated that patients can maintain improvement in blood glucose, as indicated by glycosylated hemoglobin, over a 12-month period by traditional, one-on-one counseling sessions *vs* a multidisciplinary diabetes treatment center approach. Twenty- three noninsulin dependent diabetics (NIDDM) (ages 44-77) and 22 insulin dependent (IDDM) diabetics, (ages 18-77) between 1989 and 1991 had baseline glycosylated hemoglobin determinations made before the program and one year later.

Patients self-selected either to attend individual counselling sessions with a diabetes educator and dietitian, or to attend a four-day management program to improve diabetes control. Patients in the management program also received consultation sessions by endocrinologists. Twenty-nine patients in the group program (15 IDDM and 14 NIDDM had a mean glycosylated hemoglobin decrease from 8.96% to 7.65% ($P <.008$). Sixteen patients in the traditional sessions (eight NIDDM and eight IDDM) had a mean glycosylated hemoglobin increase from 8.17% to 8.81% ($P <.220$ - not significant). This study demonstrates that diabetics who attend a multidisciplinary, intensive management program may improve and sustain diabetes control over a one-year period. This program serves as a pilot study of individual versus intensive diabetes education in a community hospital.

Section of Endocrinology, Diabetes and Metabolism, Department of Medicine, Clinical Professor (Dr. Belsky); Clinical Instructor (Dr. Becker); Yale University School of Medicine

Impact on Length of Stay in Trauma Patients with Seizure Disorders

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Background

Previous studies of possible association between epilepsy or seizure disorders, trauma, and length of stay have been inconclusive because of social and/or clinical recognition difficulties. Length of stay continues to be significant in these patients regardless of many recent diagnostic and treatment advances, which have improved both control and clinical outcome for this specific population. Current literature regarding length of stay in trauma patients with seizure disorders is limited.

Methods

We conducted a retrospective cohort analysis of 5,685 trauma patients' data over a two-year period (1987-89) from eight metropolitan area hospitals. One hundred forty-one patients met ICD-9 Code criteria for seizure disorders (ICD-9=345.0-345.9 and 780.3).

Results

	Seizure disorder	Cohort	*P*	Relative risk
LOS (days)	28.5	16	<.001	
ICU (days)	3.3	1.8	<.001	
DRG-outlier (%)	27.7	15.6	<.0001	1.8
Pneumonia (%)	12.8	5.3	.0001	2.4
Total complications (%)	33.3	21.5	<.001	1.6
Adult resp. distress syndrome (ARDS)-resp. failure (%)	9.9	3.3	<.001	3.0
History of ethanol substance abuse(%)	43.3	21.6	<.001	2.0
Pulm. embolism (%)	2.1	0.6	.0001	2.4

Conclusion

We conclude that trauma patients with seizure disorders have markedly increased lengths of stay compared to the cohort. Concomitant complications and social factors identified by remarkable relative risk, require aggressive intervention utilizing all modern methods to assist in reducing length of stay. Overall, these data provide evidence that length of stay and complications are significant in the seizure disorder population. These data may prompt a call for further evaluation of prospective payment schemes which clearly underserve providers treating trauma patients with seizure disorders

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Evaluation of A Fluorometric Enzyme Immunoassay for the Myocardial Band (MB) Isoenzyme of Creatine Kinase (CK-MB)

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Department of Laboratory Medicine.

We evaluated the analytical and clinical performance of the Baxter Diagnostics Stratus fluorometric enzyme immunoassay (FEIA) for CK-MB in human serum. This assay uses a two-site dual monoclonal antibody sandwich technique which directly measures the mass concentration of CK-MB in ng/mL. CK-MB in the serum sample binds to the first antibody, anti-CK-MB, which is immobilized on a glass fiber paper tab. A second antibody, anti-CK-BB labeled with alkaline phosphatase (ALP), is added, and an antibody/CK-MB/antibody sandwich is formed. Excess unbound label is removed by a radial elution wash step. Addition of the substrate, 4-methyumbelliferyl phosphate (4-MUP), results in a fluorescence signal whose intensity is measured and related to the mass concentration of CK-MB.

Evaluation of interassay precision gave acceptable results:

Mean (ng/mL)	**n**	**SD**	**CV (%)**
5.35	52	0.64	12.0
22.24	48	2.05	9.2
42.97	41	3.89	9.0

Parallel dose response experiments performed with patient sera containing elevated levels of CK-MB gave excellent results and confirmed the dynamic range of the assay to be 0.4-125 ng/mL. Ninety-two patient samples were assayed by both the Baxter FEIA methcd and our current immunoinhibition (INH) assay (Eastman Kodak Ektachem). Linear regression analysis (y=FEIA, x=INH) gave an acceptable correlation coefficient (r=0.971). Samples yielding discrepant results on the two assays were analyzed by CK electrophoresis with fluorescence densitometric scanning, which revealed that the FEIA method was considerably more specific for CK-MB than the isonicotine hydrazine (isoniazid) (INH) mekhod and nok prone to interference and "false positive" results caused by CK-BB and atypical ("macro") forms of CK. Discharge diagnoses were determined by chart review and showed that the FEIA method was as sensitive and more specific than INH in establishing the occurrence of myocardial infarction.

Clinical Associate, University of Connecticut School of Medicine (Dr. Sena).

Effect of Renal Dysfunction on the Detection of Renal Artery Stenosis by Dual Renal Scintigraphy

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Routine availability of percutaneous renal angioplasty has renewed interest in renal perfusion scintigraphy for noninvasive evaluation of hypertensive population suspected to be of renovascular origin. We evaluated the usefulness of renal dual isotope scintigraphy in 42 hypertensive patients in whom renal artery narrowing was suspected. All underwent qualitative and quantitative dual isotope renal scintigraphy as the initial test to diagnose renal artery stenosis (RAS), followed by contrast angiography. Twenty-eight patients had bilateral or unilateral renal artery stenosis on contrast angiography. In 26 of 28 patients renal scintigraphy was consistent the diagnosis of RAS, indicating a sensitivity value of 93%. In the remaining 14 patients (33%) angiographic and scintigraphic findings were negative indicating a sensitivity and specificity values of 100%. Sensitivity and specificity of renal scintigraphy to detect presence of RAS, however, varied significantly with the abnormalities of renal function. In the final analysis: patients with normal renal function (serum creatinine <1.5 mg/dL), the sensitivity and specificity to detect unilateral RAS by scintigraphy was 100%. Whereas in patients with renal dysfunction (serum creatinine >1.5 mg/dL the sensitivity and specificity of renal scintigraphy to detect RAS dropped to 80% and 42% respectively. The findings indicate that, in patients with classical renovascular hypertension with unilateral RAS, scintigraphy is extremely reliable, whereas in patients with mixed pathophysiology such as diabetes or atherosclerotic renal vascular disease the test reliability declines. In conclusion, dual radionuclide scintigraphy provides a noninvasive and sensitive modality for detection of RAS and should therefore be routinely employed before angiography or angioplasty. Caution should be taken in the interpretation of renal scintigraphy in patients with renal dysfunction.

Associate Professor (Dr.Gupta) University of Connecticut School of Medicine; Associate Clinical Professor (Dr Garfinkel) Yale University School of Medicine.

State Medical Society Awards Honorary M.D. Degree

At its semi-annual meeting in November, the House of Delegates of the Connecticut State Medical Society voted to bestow on its own Executive Director, Timothy B. Norbeck, the honorary degree of Doctor of Medicine. This unusual honor was granted "for the excellence of his achievements in service to the professor of Medicine."

Norbeck has become well-known in medical societies as a public speaker and writer on issues affecting physicians and health care. His tenure as Executive Director has been marked by a decade-long series of CSMS accomplishments on behalf of physicians and their patients. These include the formation of the physician-owned Connecticut Medical Insurance Company (CMIC), a statewide Medicare courtesy card program in 1985, since taken over by the state as ConnMAP, a successful CSMS countersuit fund, the first statewide IPA-HMO, M.D. Health Plan, and the CSMS Charitable Trust.

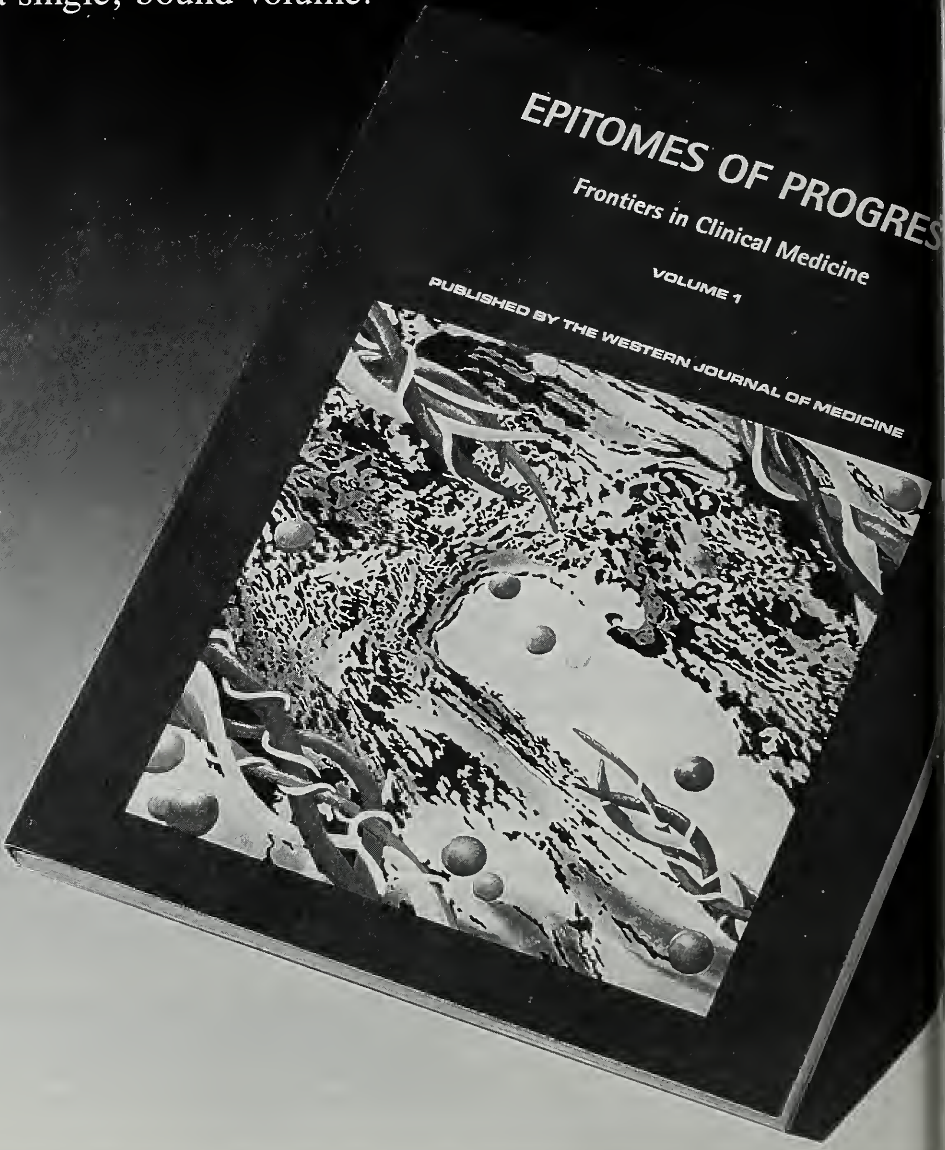
Norbeck became Executive Director of the Society in 1977, after serving in the same post for the Rhode Island Medical Society. Previously he had been the first Director of the AMA Office of Medical Student and Housestaff Affairs, and in 1968, had opened one of the first regional offices of the American Medical Association. A native of Buffalo, New York, he is an honor graduate of Hamilton College in Clinton, New York. He resides with his wife Michele in North Haven.

The authority to confer an honorary degree in Medicine was first stipulated in the original Charter of the Connecticut State Medical Society in 1792 when the Connecticut General Assembly authorized the formation of the Society. From 1792 to 1813, a number of such degrees were awarded. With the Society's role in establishing the "Medical Institution of Yale College" in 1810 and the graduation of its first class in 1814, the honorary degrees in Medicine were thereafter conferred by Yale College upon recommendation of the Society. It was not until the early part of the twentieth century that the State Medical Society again began to exercise its chartered right to bestow the honorary M.D. degree. A CSMS honorary M.D. degree was last award in 1984 to the late Norman Cousins.

After the formal action of the House of Delegates, Howard J. Wetstone, M.D., of Hartford, President of the Society, made the presentation.

epitome

i-ˈpit-ə-mē\ *n* [L, fr. Gk *epitomē*, fr. *epitemnein* to cut short, fr. *epi-* + *temnein* to cut — more at TOME] (1520) **1 a** : a summary of a written work **b** : a brief presentation or statement of something **2** : a typical or ideal example: EMBODIMENT (the British monarchy itself is the ~ of tradition — Richard Joseph) **3** : Plural — *Epit-o-mes* — A regular FEATURE of *The Western Journal of Medicine*, now available in a single, bound volume.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Important Advances in Clinical Medicine

Emergency Medicine

The Council on Scientific Affairs of the California Medical Association presents the following inventory of items of progress in emergency medicine. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of these items of progress in emergency medicine that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Emergency Medicine of the California Medical Association, and the summaries were prepared under its direction.

Ultrasonography in Blunt Abdominal Trauma

IN patients with blunt abdominal trauma, ultrasonography offers the advantage of immediate bedside availability; it is also noninvasive, safe, and inexpensive. As no radiation, contrast agent, or sedation is needed, ultrasonography can especially help with the care of pregnant or pediatric patients. Patients with allergies to contrast media or previous laparotomies in whom diagnostic peritoneal lavage could be difficult may also benefit.

Ultrasonography can detect intraperitoneal fluid collections as small as 100 mL, but cannot distinguish blood (hemoperitoneum) from other fluid (ascites). Subhepatic, perirenal, and subphrenic fluid collections can be evaluated, as can injury to the solid organs themselves. The visualization of free fluid in Morrison's pouch, between the liver and the right kidney, has been considered a criterion for laparotomy in some clinical series.

Hemoperitoneum and parenchymal damage can be diagnosed by emergency department sonograms with specificity and sensitivity of more than 90%. When its use is directly compared with that of diagnostic peritoneal lavage, however, several studies have shown that ultrasonography is not as sensitive or accurate. It is the initial imaging procedure for blunt abdominal trauma in many European centers, with workup proceeding to diagnostic peritoneal lavage, computed tomography, intravenous pyelography, scintigraphy, or other studies only secondarily.

Limitations on the use of sonograms include the presence of subcutaneous emphysema or ileus where air may obscure the image. Injuries to the pancreas and to hollow viscus, particularly the duodenum, are not reliably diagnosed. Further, scan quality and the accuracy of interpretation are dependent on operator skill and experience. Whereas in many studies scans are done by surgical residents, a few authors advocate that a radiologist do the study, even in an emergency department.

Ultrasonography is complementary to diagnostic peritoneal lavage or computed tomography. When used to supplement, but not supplant, these diagnostic modalities, it may add speed and flexibility to answering the question—is laparotomy needed?—in patients with blunt abdominal trauma.

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Flumazenil—When Is Its Use Appropriate?

FLUMAZENIL is a competitive benzodiazepine antagonist that, when released in 1992, was heralded as a possible panacea for complications associated with the use of benzodiazepines. In fact, this drug is useful in patients with benzodiazepine overdose. Its efficacy is more limited in patients with mixed overdoses or in those with an altered mental state of unknown cause, and its role in the reversal of conscious sedation has proved to be controversial.

The action of flumazenil is dependent on both the dose of the benzodiazepine being antagonized and the dose of the flumazenil used. The half-life of flumazenil usually ranges from one to two hours and is shorter than that of most benzodiazepines. This difference in half-life raises the possibility of resedation after the flumazenil wears off; the clinical importance of this prospect varies depending on the situation.

Flumazenil's main clinical role is in patients with either iatrogenic or intentional benzodiazepine overdose. In patients with pure benzodiazepine overdose, 95% awaken within five minutes of receiving doses of flumazenil totaling 0.2 to 1.0 mg intravenously; some patients require doses of as much as 5.0 mg. Although in many patients the use of flumazenil eliminates the need for intubation, the reversal of respiratory depression may be inadequate, particularly in patients with mixed overdoses (such as with opioids and benzodiazepines). It is also important to note that resedation may occur, especially in patients who receive or ingest large amounts of benzodiazepines. These patients need to be watched closely and may require repeated doses of flumazenil or a continuous infusion of 0.5 to 1.0 mg per hour.

Using flumazenil to reverse conscious sedation is controversial. In emergency departments, conscious sedation is often used during procedures that are uncomfortable and stressful for the patient. The sedative and anxiolytic effects of benzodiazepines are desirable in these patients, and when specific drugs are chosen carefully, excessive sedation and respiratory depression are avoided. Although flumazenil rapidly reverses the sedative effects of benzodiazepines in these patients, its use may be neither necessary nor beneficial. In addition, although patients are more awake after receiving flumazenil, it is not clear that they fully recover their cognitive functions; using it to hasten a patient's discharge may be inappropriate. These patients should be observed until the effect of the benzodiazepine wears off.

The initial dose of flumazenil in most patients is 0.2 mg intravenously over 15 to 30 seconds; an additional 0.3 mg over 10 to 30 seconds should be given if there is no response after 30 seconds. If there is still no response, and the patient is being reversed from conscious sedation, doses of 0.2 mg should be repeated at 60-second intervals to a total of 1.0 mg. If the patient has a possible benzodiazepine overdose, flumazenil should be given in doses of 0.5 mg intravenously over 30 seconds every 60 seconds to a total dose of 3.0 to 5.0 mg. If these patients do not respond to the maximal dose, another cause of their altered mental state should be sought.

Complications associated with the use of flumazenil are not due to the flumazenil per se, but to the loss of benzodiazepine effect. Dizziness, anxiety, agitation, and gastrointestinal symptoms may occur and are usually mild. Seizures, a more serious complication, may occur when the drug is used in patients who are benzodiazepine-dependent. In addition, the use of flumazenil in patients who have ingested medications that may cause seizures, such as tricyclic antidepressants, isoniazid, cocaine, and propoxyphene, may block the therapeutic anticonvulsant effect of benzodiazepines if their use is needed. The use of flumazenil should be avoided in patients suspected to fall into this group of patients.

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Stabilizing and Resuscitating Patients With Automatic Implantable Cardioverter-Defibrillators

AS automatic implantable cardioverter-defibrillators (AICDs) are increasingly used in patients with recurrent malignant ventricular arrhythmias, the likelihood of a patient presenting with problems relating to their AICD is increasing. Physicians must be aware of the basic functioning of AICDs and the management of emergent problems relating to them.

The AICD pulse generator is a computerized device that is usually implanted into the abdominal wall. Leads are placed on or in the heart to sense cardiac activity and to conduct the impulses from the pulse generator. The primary purpose of the AICD is to deliver a countershock to the heart in response to malignant tachyarrhythmias. The most common devices trigger their countershocks based on the sensed ventricular rate (technically, the RR interval). They cannot differentiate between supraventricular and ventricular tachycardias. The newer generations, with waveform-sensing functions, should include this capability.

Patients may come to an emergency department with a limited number of acute AICD-related problems. The most serious is ventricular tachycardia or fibrillation, which necessitates cardiopulmonary resuscitation following current advanced cardiac life-support guidelines. There is no risk to the resuscitation team from the device; it can, however, interfere with the resuscitation substantially and should be deactivated.

An AICD is deactivated by placing a standard ring-shaped pacemaker magnet over the upper right corner of the pulse generator. This may be somewhat difficult to ascertain because the generator may have turned or may have been implanted upside down. Clues are that the AICD is somewhat narrower and the leads issue from the top. When the magnet is properly applied, the generator should make tones or beep in synchrony with the QRS complex. It may emit double tones if it is also sensing the T wave. The magnet should be left on a minimum of 30 seconds, and the tone will change to a long, continuous one. This indicates that the AICD is deactivated. The magnet may then be removed, and the AICD will remain deactivated. If the AICD does not beep when the magnet is placed, it should be placed over the other corners of the device. Once the AICD is deactivated, standard resuscitation measures may then proceed.

Patients may also have symptoms relating to arrhythmias, such as palpitations, syncope, or dizziness, but with no apparent function by the AICD. When evaluating a patient, full cardiac resuscitation equipment including a defibrillator should be immediately available. The basic sensing and operation of the AICD may be checked again with the magnet. If the device does not sound with each QRS complex, it is either dead or not sensing correctly. Even if the AICD sounds with the magnet, patients with serious symptoms attributable to arrhythmias should be evaluated and admitted to an intensive care area with specialty consultation.

Another scenario involves patients who receive a shock from their device. This may be either an appropriate shock, indicating that the patient has survived an otherwise-lethal arrhythmia, or an inappropriate shock due to device malfunction or supraventricular tachycardia. If the patient presents after a shock, but otherwise looks well, it can be assumed that the shock was an appropriate one. Patients should be fully monitored, antiarrhythmic levels measured, and a specialty consultation obtained immediately. Usually these patients must be admitted to a monitored bed, but selected patients, in consultation with their cardiologist, may be discharged. In all such cases, caution should be the guide.

Patients receiving obviously inappropriate shocks can be terror-stricken. Cardiac resuscitation equipment, including a defibrillator, must be at the bedside during evaluation. If the discharges are in response to a supraventricular tachycardia, the causes, such as uncontrolled atrial fibrillation, congestive heart failure, or ischemia, should be treated.

If the device is obviously malfunctioning or if the patient cannot tolerate the discharges until the supraventricular arrhythmia is controlled, the AICD may be deactivated with a magnet as described above. Extremely close monitoring, bedside resuscitation equipment including defibrillator, and immediate consultation are mandatory with any patient who has had their AICD deactivated. Admission to an intensive care area is mandatory.

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Options for Sedating Children

PEDIATRIC sedation has been the subject of much attention and controversy over the past several years. Despite recent advances, there is still no consensus on the best approach for safely and effectively sedating children in an emergency department.

The most commonly used sedative preparations for pediatric patients are chloral hydrate and the combination of meperidine hydrochloride, promethazine hydrochloride, and chlorpromazine. Chloral hydrate is a sedative hypnotic with a long record of safety and efficacy. Sedative doses produce somnolence with little effect on respiration or blood pressure. It is especially useful for young children having procedures such as computed tomography, magnetic resonance imaging, or electroencephalography. Chloral hydrate has no analgesic properties and is therefore not generally used alone for painful procedures.

Sedation occurs within 30 to 60 minutes at doses of 25 to 100 mg per kg orally or per rectum. Sedation is inadequate in 30% to 40% of patients, and additional doses are often needed. Complications are rare; the most common are gastric irritation and hyperactivity. There has been concern recently about possible toxicity. Chloral hydrate is a metabolite of an extremely toxic carcinogen, trichloroethylene. Carcinogenicity associated with chloral hydrate administration has not been described in humans. The United States Food and Drug Administration is currently conducting studies to investigate this possibility, and many practitioners have curtailed their use of chloral hydrate pending additional information.

The use of meperidine, promethazine, and chlorpromazine, a sedative analgesic combination, is familiar to many emergency department physicians. It is usually reserved for painful procedures such as fracture reduction or the repair of complex lacerations. Its use has been associated with a high incidence of adverse side effects, including respiratory depression, hypoxemia, and prolonged sedation. Overall, the efficacy and safety profile of this combination is poor compared with alternatives.

Midazolam hydrochloride is a newer benzodiazepine with sedative, anxiolytic, and amnestic properties. It has a rapid onset and short duration of action, making it particularly well suited for use in the emergency department. It has gained widespread popularity as a sedative for children undergoing radiographic studies, although some practitioners report high failure rates. Because of its lack of analgesic effect, it is not recommended as the sole agent for minor surgical procedures. It can be used successfully for short painful procedures because it has amnestic properties. Sedative doses minimally depress respiration and cardiovascular function, but respiratory depression and hypotension can occur. Midazolam is available only in parenteral form. The parenteral preparation can be given orally at a dose of 0.5 mg per kg; its bitter taste can be masked by mixing with soft drinks, juice crystals, or acetaminophen elixir. The intranasal route is preferred for infants. The dose for this is 0.3 mg per kg, and it may be dripped into the nose with a small syringe. Rectal midazolam is used less frequently. The standard parenteral form can be administered through a syringe connected to a gel-lubricated pediatric feeding tube inserted into the rectum at a dose of 0.3 mg per kg.

Pentobarbital sodium is used commonly for radiographic procedures. The barbiturates are sedative hypnotics with no analgesic action. Sleep doses in children, unlike in adults, rarely result in apnea, but hypotension can occur. Careful patient selection and monitoring are required. The dose for pentobarbital intravenously or intramuscularly is 2 to 6 mg per kg. Methohexital sodium and thiopental sodium are other barbiturates that have been used successfully in pediatric radiology. Methohexital, 10 mg per kg intramuscularly, and thiopental, 25 to 45 mg per kg per rectum, are the most common regimens.

Ketamine hydrochloride, a derivative of phencyclidine (PCP), has been used for many years in anesthesia. It provides a unique combination of sedation, analgesia, and amnesia, along with a "dissociated effect." Patients typically have a disconnected stare with stiffness, drooling, and nystagmus. There may be vomiting on awakening.

The use of potent sedatives in the emergency department mandates that proper safety mechanisms are in place. Physicians must have extensive knowledge of the medications and techniques used, be skilled in airway management, and be able to handle any complications that may arise. Specific guidelines for monitoring, equipment, and support personnel have been outlined by the American Academy of Pediatrics. Additional studies are needed to provide further information on the safe and efficacious use of sedatives in children.

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Dealing With Violence in the Prehospital Setting

THE Crisis of escalating violence in society has resulted in emergency medical service (EMS) systems adapting and implementing changes in the delivery of medical care in prehospital settings. Rescuer safety has become a primary consideration to prevent a violent situation that turns rescuers into additional patients. These precautions may conflict with the public's expectation of immediate response by public safety agencies. Emergency medical service personnel holding back until the scene is "secure" may be perceived by the media and public as lacking in caring resulting in an unnecessary delay in the delivery of care. Nonetheless, EMS systems are adapting to the environment of increasing violence with design changes.

Modifications in the dispatching of EMS teams include the concurrent dispatching of law enforcement on calls associated with a high risk of violence—gunshot wounds, suicide attempts—and dispatching recognition and notification to the EMS personnel of addresses or areas previously associated with violence. Where possible, EMS crews should avoid traveling through dangerous areas during their response to calls.

In high-risk situations, EMS crews often "stage" at a nearby safe location until the scene is cleared by law enforcement officials. Although an increasing number of prehospital care professionals are wearing body armor (bullet-resistant vests), this protection is not a substitute for avoiding a violent situation and for common sense. Many EMS systems have recognized the similarity of prehospital professionals' uniforms to those of law enforcement officers (with badges and leather holsters worn on the hip) and are taking steps to modify the appearance of the EMS personnel to reduce the risk of misidentification.

Prehospital health care providers try to maintain a high level of awareness of their surroundings, looking out for any weapons or objects that could possibly be used as weapons. They maintain an adequate distance for their personal safety until the stability of the situation is assessed. Crews must clearly identify themselves as EMS personnel. As prehospital personnel approach a patient, they are careful not to encroach on the person's personal space before establishing rapport with the patient. A route of exit from any situation is considered, and personnel become aware of who and what is behind them.

Only in the absence of an adequate number of law enforcement officers should EMS personnel be involved in physically restraining a patient. Careful planning for the act of restraining the patient is necessary to avoid injury to EMS personnel or the patient. Pharmacologic approaches to restraint, such as the use of haloperidol, are in most cases not within the approved scope of practice for prehospital personnel. If the risk of violence is high enough to make the scene unsafe, EMS personnel retreat to safety and, if possible, remove the patient from that situation, initiating therapy in a safer environment.

Emergency medical service systems have recognized and are beginning to deal with the high tension associated with a violent work environment. Postevent stress debriefing should be given to personnel involved in a violent prehospital situation. Systems must recognize the inherent risks of burnout of personnel, spousal and family dissatisfaction with a career perceived as exceedingly dangerous, and the potential of substantial staff turnover.

An increased awareness of and planning for the possibility of violence at both an individual prehospital care provider and an EMS systemwide level are the best prophylaxis against violence resulting in death or injury to prehospital personnel.

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Sumatriptan—A New Treatment of Migraine

In the United States an estimated 18% of the adult female and 6% of the adult male population suffer from migraine headaches. Current therapies using simple analgesics, such as nonsteroidal anti-inflammatory drugs, ergot alkaloids, antiemetics, and narcotic analgesics, have side effects and limited effectiveness. Sumatriptan (Imitrex, Glaxo Inc.), a serotonin (5-hydroxytryptamine)-receptor agonist recently approved in the United States for the treatment of acute migraine, may make these agents obsolete.

Sumatriptan is thought to relieve the pain of migraine by its direct action on a subgroup of serotonin receptors (5-hydroxytryptamine—1) in the walls of large intracranial arteries. By selectively activating serotonin receptors, sumatriptan causes vasoconstriction, thereby relieving migraine pain, which is thought to be due to vasodilation. Because sumatriptan is a selective receptor-specific agonist, it has fewer effects on the coronary and peripheral circulation than other antimigraine drugs, such as ergotamines, which are nonselective in their actions.

Studies comparing sumatriptan with placebo show that both subcutaneous and oral formulations are successful in relieving moderate to severe migraine in two hours in about 55% of patients following the oral administration of 100 mg and within an hour in about 75% of patients following a 6 mg subcutaneous dose. This compares to a placebo response of 15% to 20%. Patients not responding to a first dose of sumatriptan rarely benefit from a second dose, although the manufacturer recommends trying a second treatment. Sumatriptan is also effective in aborting the associated symptoms of nausea, vomiting, photophobia, and intolerance to noise. The drug is effective in both classic and common migraines, regardless of the time it is administered during the attack.

As many as 40% of patients who initially respond to sumatriptan have recurrent headache within 24 hours. This may be related to the short (2-hour) half-life of the drug. Whether these headaches can be prevented by repeated oral dosing has not been studied. Tachyphylaxis has not been shown to occur.

As many as half the patients treated with sumatriptan have an adverse event compared with a third of patients receiving placebo. These side effects are usually minor and resolve within 30 minutes. The most common side effects are burning, pain, and redness at the site of the injection and generalized flushing, tingling, warmth, or lightheadedness. Chest tightness is occasionally reported, but no association between chest complaints and electrocardiographic changes has been found. Nonetheless, sumatriptan is not recommended in patients with ischemic heart disease, Prinzmetal's angina, or uncontrolled hypertension or in patients taking lithium carbonate or 5-hydroxytryptamine reuptake-inhibitor antidepressants. The drug's safety has not been established in pregnant women or in children. The manufacturer of sumatriptan recommends not using ergotamine and sumatriptan within 24 hours of each other as their vasospastic effects may be additive.

Sumatriptan has undergone extensive worldwide clinical trials in the treatment of acute migraine and is now available in the United States as a 6 mg subcutaneous injection and as an autoinjector with prefilled syringes for subcutaneous self-administration by patients at home. The early use of this device at home has the potential for substantially decreasing the number of visits to emergency departments for migraine. It is anticipated that the oral form, already being used in Europe, will be available in the United States within a year. The wholesale price to hospitals is $26.50 per 6 mg dose. A starter kit with the autoinjector device and two prefilled syringes costs $56.80.

Although further clinical studies comparing the use of sumatriptan with that of existing migraine treatment regimens are needed and cost must be considered, sumatriptan has been shown to be a rapid, effective, well-tolerated treatment of migraine, and it is an important addition to the therapies currently available.

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Intravenous Diltiazem Hydrochloride Rather than Verapamil for Resistant Paroxysmal Supraventricular Tachycardia

SUPRAVENTRICULAR tachycardia is a relatively common problem seen by physicians. Verapamil has been the medication of choice in treating stable patients with narrow-complex supraventricular tachycardia. Relatively recently, adenosine has become the first-line medication, predominantly because of its relatively short half-life and extremely safe drug profile. Many, if not most, physicians now start treatment with adenosine both diagnostically and therapeutically, but go back to giving verapamil to patients with resistant or recurrent tachycardia.

Verapamil, although a good medication for the disorder, is not free of complications. The most often quoted and feared complication is hypotension, especially in patients with already compromised circulatory function. Hypotension is thought to be due to the drug's direct cardiodepressant effects in addition to its smooth muscle vasodilatory effects. Some authors go so far as to recommend pretreatment with calcium chloride or, if hypotension develops, as an antidote. These complications make verapamil less desirable in treating patients with supraventricular tachycardia.

Diltiazem (recently available in intravenous form) now provides what appears to be a safer and more reliable treatment of this disorder than verapamil. Although a calcium channel blocker with a mechanism similar to verapamil, diltiazem exhibits considerably fewer cardiodepressant effects and is associated with fewer episodes of notable hypotension. In several small studies carried out in electrophysiology laboratories where tachycardia was induced electrically, diltiazem terminated 90% to 100% of the episodes with few episodes of serious hypotension.

This compares most favorably with verapamil, which has a similar reported conversion rate (greater than 80%) but a higher incidence of hypotension and cardiac depression.

Like verapamil, diltiazem is recommended for stable patients with narrow-complex supraventricular tachycardia as well as for the temporary control of rapid ventricular rate in atrial fibrillation or atrial flutter. The use of diltiazem, like that of verapamil, is contraindicated in patients with wide-complex tachycardia, sinoatrial or atrioventricular nodal disease, and recent β-blocker usage. The current recommended dose is 0.25 mg per kg given slowly by intravenous pyelogram over one to two minutes. If no response and no episodes of hypotension are seen after 30 minutes, the dose should be repeated at 0.35 mg per kg. Intravenous diltiazem is proving to be safe, effective, and well tolerated by patients with supraventricular tachycardia. It may soon supplant verapamil in the treatment of refractory tachycardia.

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Management of Combative Trauma Patients

THE evaluation in an emergency department of an agitated, combative patient with major trauma can be difficult. It is important that physicians dealing with patients of this type have a systematic approach to their management. Combativeness by injured patients may be due to hypoxia, hypovolemia, head injury, drug or ethanol ingestion, pain, or psychogenic causes. Identifying and correcting the problem requires a physical examination and diagnostic testing. This may be impossible in a combative patient, however, leaving a clinician with three options: physically restrain the patient and delay diagnostic evaluation until the patient calms down, use a sedating agent, or invoke total chemical restraint with paralysis and intubation.

Physical restraint and observation is an inappropriate approach to a possibly injured patient. Attributing combativeness to intoxication or to psychogenic causes can be a fatal error in judgment.

Sedating agents used to control combative patients include narcotics, benzodiazepines, and butyrophenones. Narcotics and benzodiazepines have a rapid onset of action and are titratable and reversible. Respiratory depression and hypotension, however, are serious drawbacks with both classes of drugs. Butyrophenones (haloperidol and droperidol) have been suggested as the optimal sedating agents for the control of combative trauma patients. Both agents cause sedation with little effect on the respiratory drive. Possible complications of their use include prolonged sedation, hypotension, dystonic reactions, a neuroleptic malignant syndrome, and adverse interactions with ethanol or street drugs.

Total chemical restraint of a combative trauma patient with paralysis and ventilatory support has been called "inhumane" and "not justifiable." Some condemnation of this practice is based on the fear of iatrogenic complications, most important the possibility of paralyzing a patient and then being unable to ventilate that patient. Other possible complications of neuromuscular blockade include aspiration, hyperkalemia, and malignant hyperthermia. These complications, however, are rare; the risks must be weighed against the benefits of truly adequate airway control and expediting the diagnosis and management of serious injuries.

The management of combative trauma patients must be individualized. Hemodynamically stable combative patients with a low probability of major head injury can be managed with sedation alone using butyrophenones as the agents of choice. Combative patients with signs of a serious head injury should be managed from the start with rapid-sequence paralysis and intubation. Hemodynamically unstable patients should undergo rapid evaluation and resuscitation, and if it appears risky to sedate such patients without controlling their airway, neuromuscular blockade and sedation should be considered.

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Improving Emergency Department Response to Victims of Domestic Violence

MANY women who seek care in emergency departments are estimated to have symptoms directly or indirectly related to domestic violence. Some will present with injuries due to battering. Many others present with nontraumatic symptoms, such as depression, suicide attempts, chronic pain syndromes, hyperventilation, and sleep disorders. Some of the 15% to 25% of pregnant women who are battered will have pregnancy-related symptoms, such as pelvic pain, vaginal bleeding, or impending miscarriage.

Despite the prevalence of domestic violence, the diagnosis is frequently missed. Some reasons are cited in the literature for this failure to diagnose, including time constraints, failure of a patient to volunteer information, and the lack of training, prejudice, and misunderstanding on the part of medical personnel.

Although there may be clues that suggest domestic violence, from a patient's inappropriately flat or fearful demeanor, a central or defensive pattern of injuries, or the abusive partner's overly solicitous or protective behavior, many cases of domestic violence will not be identified unless the victims are questioned directly about the existence of violence in their lives. Questions such as "Injuries like this are sometimes the result of violence in the home. Is this what happened to you?" or "Violence in the home is very common. Have you experienced verbal or physical assault in your home?" should be routinely incorporated into the history.

Victims of domestic violence have often been systematically cut off from friends and family. They may feel alone and that they have no one in whom to confide. They may think no one will believe their story. Frequently they feel that they are somehow to blame for what is happening to them. It is important for them to be told that they are not alone, that they do not deserve to be beaten, and that help is available. All emergency departments should have up-to-date lists of domestic violence agencies and other resources available in their communities. These measures and referrals are of therapeutic benefit.

Finally, since January 1992, the Joint Commission on the Accreditation of Healthcare Organizations has required that emergency departments have written policies and procedures for identifying, evaluating, treating, and referring battered adults. There is also a requirement for a plan to educate staff about domestic violence. Essential elements that should be incorporated into emergency departments' written domestic violence policies include a definition of domestic violence and its dynamics, a listing of common indicators suggesting domestic violence, details of appropriate documentation and evidence collection, specific interventions, referral information, and state reporting requirements.

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Conscious Sedation in the Emergency Department

ONE of the most important duties of an emergency department physician is to alleviate pain and anxiety. Failure to achieve this goal occurs for various reasons, not the least of which is the absence of an ideal agent. If such a drug or combination of drugs existed, it would be safe and effective, have a rapid onset and short duration of action, demonstrate minimal side effects, be easy and painless to administer, provide excellent analgesia and amnesia, and be reversible. Although the search for such an agent continues, the technique of conscious sedation using midazolam hydrochloride and either ketamine hydrochloride or fentanyl citrate comes close to satisfying many of these criteria.

The concept behind conscious sedation is to produce a state of analgesia and sedation with a minimally depressed level of consciousness. The patient should not require assistance with airway maintenance or protection and should be able to respond to physical and verbal stimuli. Indications for conscious sedation include, but are not limited to, rape examinations, the repair of tongue lacerations in children, fracture reduction, and to facilitate lumbar punctures, abscess drainage, and wound debridement. When using this technique, the patient should be monitored with a pulse oximeter and preferably should have had nothing by mouth for three hours. In addition, the physician must have experience with airway management and all the equipment necessary to do any airway intervention. Naloxone hydrochloride and flumazenil should also be available at the bedside.

Ketamine, a dissociative anesthetic and analgesic, has been in use for 20 years. It can be administered intramuscularly, intravenously, orally, or per rectum, produces excellent anesthesia, analgesia, and amnesia, and has rapid onset and recovery and a wide margin of safety. Unlike general anesthetics, ketamine supports the cardiovascular system and does not depress ventilation. Notable contraindications include increased intracranial pressure, use in neonates, respiratory infections, tracheal abnormalities, moderate hypertension, and congestive heart failure. For parenteral administration, the dosage is 2 mg per kg intravenously or 4 to 6 mg per kg intramuscularly. To administer orally, 8 to 10 mg per kg is the currently accepted dose. These regimens will typically produce dissociative anesthesia for 10 to 15 minutes, with the oral route sometimes producing effects lasting as long as 30 minutes. Midazolam (Versed) should be given to older children and adults to minimize the emergence phenomenon (mild hallucinations while awakening). It can be given intramuscularly or intravenously (0.05 mg per kg), orally (0.50 to 0.75 mg per kg), or nasally (0.3 mg per kg).

Another agent effective at producing conscious sedation is fentanyl. This drug is a short-acting narcotic with effects lasting less than an hour. It does not release histamine nor cause myocardial depression. The problem of chest wall rigidity is not seen with the low doses used in emergency departments. Mild respiratory depression can be substantially reversed with naloxone. The pulse oximeter is effective in detecting this event, however, and patients will usually respond to verbal instructions to breathe without requiring further intervention.

Fentanyl is typically given with midazolam to help with painful procedures. Like midazolam, fentanyl can be administered both parenterally and nonparenterally. The intramuscular and intravenous dosages are the same, 2 mg per kg. The nonparenteral route is through a transmucosal delivery system (lollipop). Its action begins in 15 to 30 minutes, with the optimal dose of 10 to 20 μg per kg. Mild facial pruritus is frequently reported with this delivery system, but it has no clinical consequences and does not interfere with drug administration. Patients usually recover enough to be discharged within two hours.

Other drugs, such as nitrous oxide, chloral hydrate, and pentobarbital sodium (Nembutal), could also be included in this discussion, but they do not have as many of the desired traits as do ketamine, fentanyl, and midazolam. In addition, they are either too difficult to administer, last too long, or have no analgesic properties.

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Whole-Bowel Irrigation in the Management of Ingested Poisoning

WHOLE-BOWEL irrigation is a recent and promising adjunct for gastric decontamination in some patients with toxic ingestions. Whereas the judicious use of gastric lavage and the liberal use of activated charcoal are generally adequate, there are special circumstances when whole-bowel irrigation is indicated.

Polyethylene glycol electrolyte solutions (GoLYTELY [Braintree Laboratories, Inc.] and CoLyte [Reed & Carnrick]) were designed to be used for cleansing the gastrointestinal tract before an operation or colonoscopy. These solutions are isosmotic, and the salts are nonabsorbable, allowing them to be effective cathartics without causing fluid or electrolyte shifts.

For whole-bowel irrigation, the preparation is usually administered through a nasogastric tube at a rate of 2 liters per hour in adults (about 25 mL per kg per hour in children) and continued until the rectal effluent is clear, usually in four to six hours. This procedure is most readily performed in awake patients capable of sitting on a bedside commode, but it is also possible in obtunded patients. Whole-bowel irrigation is well tolerated in adults, children, and even in pregnant women. Contraindications to whole-bowel irrigation include ileus, perforation, and substantial gastrointestinal bleeding. The concomitant administration of activated charcoal and polyethylene glycol solutions decreases the binding capacity of the charcoal.

Whole-bowel irrigation is recommended for use in "body packers" (professional smugglers who ingest many carefully wrapped containers of drugs) and may be of some use in "body stuffers" (drug merchants who hastily swallow poorly packaged containers of drugs).

Patients who ingest potentially toxic iron and lithium carbonate preparations are good candidates for whole-bowel irrigation because these drugs are poorly absorbed by activated charcoal. A human model of lithium intoxication showed a 67% decrease in absorption with the use of only whole-bowel irrigation. A case series of pediatric iron ingestions showed, by serial x-ray films, the inadequacy of gastric lavage alone and the subsequent efficacy of whole-bowel irrigation in removing intact pills.

Whole-bowel irrigation may have a role in the treatment of patients who ingest sustained-release preparations of various medications. Logically, the most rapid method of removing sustained-release tablets from the body would minimize their toxic effects. Studies of the procedure in this subgroup have yielded conflicting results, however. A human model of a nontoxic sustained-release salicylate ingestion showed whole-bowel irrigation to be superior to activated charcoal. An awake dog model of a toxic dose of sustained-release theophylline showed no decrease in absorption with whole-bowel irrigation compared with activated charcoal. No clinical trials have been done assessing the efficacy of whole-bowel irrigation in any clinical scenario.

The use of whole-bowel irrigation in serious intoxications of iron, lithium, and sustained-release drugs may be considered as an adjunct in these difficult cases.

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Diagnosing Acute Cardiac Ischemia

ESTIMATES of the incidence of missed diagnoses of acute myocardial infarction in emergency departments range from 2% to 5%. Compared with physician judgment, computerized statistical predictive models show a trend toward higher specificity (that is, fewer patients are admitted to rule out myocardial infarction), but their sensitivity in detecting myocardial infarction is not improved (no fewer missed myocardial infarctions). An artificial neural network may prove to be a sensitive and specific mathematical model for predicting the presence of myocardial infarction.

Electrocardiography (ECG) is the most widely used diagnostic study in the evaluation of chest pain in emergency departments. As many as a quarter of all missed myocardial infarctions are attributable to a misinterpretation of the initial 12-lead ECG, however. Unfortunately, the initial ECG reveals ST-segment elevation in only about half of all patients with acute infarctions. The sensitivity of the ECG for acute cardiac ischemia may be enhanced by the use of serial ECGs, right-sided chest leads (15 leads), and even back leads (22 leads), as well as continuous computerized ECG-trend monitoring to detect beat-to-beat changes in QRS complex structure and ST-segment shifts.

Newer immunochemical assays have been developed that can detect early, small increases in the creatine kinase isoenzyme, CK-MB. Creatine kinase isoenzyme measurements over the first three to four hours after a patient comes to an emergency department can improve the accuracy of diagnosing infarction in patients with nondiagnostic ECGs. The number of hours of chest pain is key to interpreting cardiac enzyme results. Myocardial infarction patients with chest pain for three, six, nine, and 12 hours had elevated CK-MB values in nearly half, more than half, greater than 75%, and 100% of cases, respectively. About 80% of all patients with myocardial infarction with nondiagnostic ECGs had elevated CK-MB levels within three hours of presentation; the combined sensitivity of serial ECGs and CK-MB determinations in emergency departments approaches 90%.

Myoglobin is released earlier than CK-MB from damaged myocardial cells (within 2 to 4 hours), but it disappears from the serum within 6 to 12 hours, about the time of the expected CK-MB elevation. Serial measurements using new rapid assays for myoglobin may be 100% sensitive for detecting myocardial infarction in the first six hours after the onset of chest pain. Other serum markers of myocardial damage, such as creatine kinase-MM subtypes, light-chain myosin fragments, and the troponin in protein, are currently under investigation. Troponin appears to have early diagnostic characteristics similar to those of CK-MB in patients with infarction. It also detects about half of the patients with unstable angina, and levels remain elevated for days after the infarction.

A trend in the evaluation of chest pain is the introduction of cardiac emergency or chest pain centers, usually within the confines of existing emergency departments. The diagnostic tools described above are combined with traditionally nonemergency cardiac testing. Echocardiography can reveal regional wall motion abnormalities within the first hour after coronary artery occlusion occurs. Thallium and technetium scintigraphy can show areas of decreased myocardial perfusion within four to six hours of infarction, but share the same problem as echocardiography in distinguishing new from old infarcts. A preliminary study of treadmill exercise stress testing in 32 emergency department patients with atypical chest pain suggests that coronary artery disease can be ruled out in carefully selected patients. With demands for more rapid and accurate diagnosis and for better resource use, the future evaluation of chest pain patients will most likely involve some type of outpatient holding area in emergency departments.

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Prehospital 'Do-Not-Resuscitate' Orders—A New Option

ONE of the most difficult ethical issues in medicine is when and under what circumstances to withhold what are collectively referred to as "resuscitative measures." Practicing physicians are familiar with do-not-resuscitate (DNR) orders in the hospital setting; DNR orders spare patients undesired and often futile interventions. Yet physicians also need to know about prehospital DNR systems and to take action to make sure all required documentation is in place before a critical event. Health care professionals have a responsibility to educate their patients about the appropriate use of the prehospital system. This includes not only when to call 911, but when not to call.

Despite educational efforts, families still call 911 for terminally ill patients. Families desire treatment short of resuscitation; others seek verification that death has occurred; still others think they are expected to notify authorities through an emergency number. Prehospital personnel may have only seconds in a confused situation to determine a patient's resuscitation status.

In light of the natural tendency to call the emergency 911 number when a death occurs, physicians must plan ahead to ensure that appropriate patients possess valid prehospital DNR orders. A well-designed prehospital DNR system avoids subjecting patients to unwanted and invasive measures, takes pressure off families in crisis situations, and relieves professionals of uncertainty surrounding legal obligations to initiate unwanted resuscitative measures.

New California state guidelines strongly encourage local agencies to enact prehospital DNR protocols. Once signed by a physician and the patient, prehospital DNR orders indicate that the patient or surrogate understands the advantages and disadvantages of attempted resuscitation, is making an informed decision, and wishes to proceed with a DNR order. Patients are offered medallions inscribed with "Do Not Resuscitate EMS" similar to the Medic Alert bracelet. The new statewide DNR form will be respected by prehospital personnel no matter where the patient is.

Emergency medical system protocols regarding prehospital DNR status commonly include provisions of palliative treatment despite the DNR status; guidelines for the management of the deceased, including removal of the body; and access to grief-support counseling for families, as well as "critical-incident stress debriefing" for providers, as needed. In this way, costly resuscitation attempts will not be started if they are not desired or medically indicated. By signing prehospital DNR orders, physicians will spare their patients intrusive, unwanted, and futile interventions and allow prehospital health care providers to honor a patient's right to death with dignity.

The California Medical Association (CMA) Committee on Emerging Trends and the California State Emergency Medical Services Authority have produced a standard DNR request form now available to physicians through the CMA (415-541-0900, extension 5175); several other states are developing or have developed similar systems.

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The Other Side of Tomorrow

WILLIAM PAUL SKELTON III, M.D.

I was a 33-year-old internist. Life had been good to me. Success, happiness, and love all came to me. It seemed as if it had been too easy, perhaps all too easy. A beautiful, healthy baby boy arrived. Life could not have been better. I had the best of everything.

In mid-1989 my fortunes changed. Slowly, imperceptibly, I began to grow weak. The least physical exertion produced tremendous left shoulder pain. I also developed migraines two to three times each week. Like all young physicians at a medical university, I attributed these symptoms to stress and lack of exercise and sleep. Their persistence, however, forced me to see an orthopedist, who diagnosed left shoulder bursitis. The neurologist diagnosed frequent migraines with aura and started verapamil. The symptoms relented somewhat by late 1989 but soon returned in earnest. My weight dropped 10 pounds. I was perpetually weak and tired.

My wife's birthday was on January 31st and I had intended to take her to dinner. My body had other ideas. I developed hemoptysis, fever, and phlegm. A simple pneumonia, I thought, or perhaps even tuberculosis, either of which needed only antimicrobials to cure me. All I needed was a chest radiograph to confirm my diagnosis. But, as the radiograph emerged from the processor, my pulse quickened and the acrid taste of metal filled my mouth. A large mass filled the anterior mediastinum and left paratracheal area.

I dashed from one benign diagnosis to another. I took the radiograph from the view box and walked outside. My physician-wife was in the hall and asked me how it looked. I could not look at her; I could only mutter that it looked bad. We went into the reading room and placed the image on the viewer. "Squamous cell carcinoma of the lingula,'' was the calm, indifferent diagnosis offered by the radiologist. But it was me!

All of life's problems pale into insignificance when one is faced with a terminal disease. I felt as if all the burdens of the world weighed on my soul. I couldn't move. I was a participant yet was not really there; it was as if it were an odd dream, a cruel scene in a play I watched from afar. Reality came crashing back when the radiologist asked for some history and my wife whispered that I was the patient. I knew then I was going to die. It was so cruel and so unfair! I had had it all. The list of alternative diagnoses offered by the radiologist could not temper my feelings. I walked away broken, shattered, emotionally destitute.

After facing my own mortality, still I had to tell my parents. I postponed the call, dreading their reaction. I got them both on the line and began to explain the radiograph's abnormality. But I couldn't continue. My heart pounded, my throat constricted, and my eyes filled with tears.

In the days to follow, I ran the entire gamut of emotions. I became convinced that the diagnosis would fit an atypical presentation of tuberculosis. Anger consumed me, and then self-pity. Why me? It was not fair. Self-pity gave way to utter despair. I agonized over my wife and son. Who would teach him to be a man?

I began to bargain with God. "Please make this a treatable disease, and I will do all the right things." I promised.

It came time for the biopsy. As I walked into the CT room, I knew life would never be the same. Whatever the diagnosis, I knew that shortly after chemotherapy would start and I would be less of a person than before. It stunned me as I disrobed and lay on the table. I was a patient!

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I was jerked back into reality by the pain of the intravenous needle and I heard a soon to be all-too-familiar line, "Your veins roll." Three additional tries, then success, and the examination began. The tumor was located, the biopsies secured, and then I waited for the results. It seemed that hours passed. The radiologist returned with a presumptive diagnosis of large-cell lymphoma. There I lay, mercilessly perched between the bottomless pit of despair on one side and the faint offer of hope on the other.

I knew it was not the best diagnosis, but I also knew it was not certain death. How do you feel when you are told that you have a slim chance of survival? I was elated!

Within two days the hemoptysis worsened. The permanent stains rendered a verdict of poorly differentiated germ-cell carcinoma with seminomatous elements. Chemotherapy commenced immediately. I received a triple regimen of bleomycin, etoposide, and cisplatin.

As I lay in bed on day one of cycle 1, I had no idea what to expect. Prehydration and osmotic diuresis produced only the nuisance of polyuria. But when bleomycin was started, all the cruelties of chemotherapy became manifest. I began to shiver, each spell lasting three minutes and reappearing in another 10. Then the shivering became worse. My body began to jump and writhe; the episodes were longer, maybe 10 minutes with only three minutes off. Waves of heat and cold permeated my body simultaneously. I thought I was stoic, but now I was no longer in control. I was alone in a sea of uncertainty and discomfort.

After the bleomycin came the etoposide and cisplatin and from these came extreme nausea and a visceral retching such as I had never experienced. The inevitable diarrhea only added to the discomfort of total misery. The sight, smell, or thought of food became abhorrent. The mere knowledge that the meal cart was coming produced a return of the retching. I became utterly depressed. I wanted all visitors out of the room. No one was welcome to share my despair—no clergy, no friends. no family. Life held no real meaning. I simply didn't care. My only reality was the clock on the wall. No matter if I slept or daydreamed, there it hung, motionless, watching me.

After an eternity, cycle 1 was over and I could go home. But I could not escape the nausea or the depression. The small pleasures of life were gone. The agony and dread of the next cycle filled their place. At least the migraines were gone.

A radiograph three weeks later revealed that the tumor had shrunk in size by more than half. I was overjoyed! Life took on new meaning. I almost looked forward to cycle 2, even with the portocath placed when all my peripheral veins sclerosed.

But my joy was short-lived. The radiograph obtained after cycle 2 revealed no further change in the tumor. My kidneys began to deteriorate and my hearing decreased, further obscured by tinnitus. I began to lose my hair. Each morning I would awaken to a pillow case covered with hair. The shower drain would clog with it. Now, as I looked in the mirror at my balding head, my sunken eyes, and my emaciated body, I knew I might not survive. The thought of that parasite of my own body, sucking the vital essence of my being, revolted me. How could I persist in nourishing this unwelcome intruder? How could I get rid of it?

Cycle 3 came and went. The decision was made to proceed with a thoracotomy because the radiograph revealed no further change in size. They talked of postoperative radiotherapy. Even if I survived, what would be left of me? The bleomycin had ruined my lungs. The cisplatin had irreversibly damaged my kidneys, my hearing, and the sensation in my feet. I decided against cycle 4. If I had such an arduous road to travel, why augment the present damage? My wife insisted and convinced me to proceed.

The day of the thoracotomy arrived. I greeted it with no emotion. I was a prisoner. I had no way to turn. My life was in the hands of the surgeon and God.

Stabbing chest pain awakened me several hours later in the surgical intensive care unit. It would not be discovered until 12 hours later that the epidural catheter for postoperative analgesia was malpositioned, and I had been given no pain relief. During this time of lancinating pain, my wife appeared at my bedside. Her voice was sweet as honeydew, and her message was one of victory: No viable cancer cells were seen in any of the sections—no more tumor!

With such news, I could easily tolerate the next several days. Nothing seemed to bother me anymore, not the incessant examinations by the third-year medical students, not even the nurse awaking me at two o'clock in the morning to see if I was asleep. All of this became insignificant as I realized I had won.

Looking at my body in the mirror, I could see the ravages of the battle that I had just been through. The midsternal scar was beginning to heal. Another ugly reminder was the portocath under my left clavicle. My oncologist suggested we remove the portocath; it was no longer needed.

The nightmare would not be over quite as quickly as I had hoped. During removal of the portocath, the dissecting blade sheared seven inches of tubing. This seven inches migrated into the right ventricle and promptly caused bursts of ventricular ectopy. How could this happen to me? After all I had been through, after all the chemotherapy, the pain and anguish of the thoracotomy, was I to die from a ventricular arrhythmia due to a silly mistake like this? Was I going to be allowed to run the entire marathon, only to collapse within sight of the finish line? Fortunately, an experienced angiographer was able to access the right femoral vein and hook this unwelcome piece of tubing and end my nightmare.

It has now been three years since diagnosis. All post-procedural examinations have been within normal limits. I was given the unique opportunity to see life from various extremes. Being a patient was terribly unpleasant. I know how my patients feel. I know that there is much more to being a good physician than just being a good diagnostician. I have learned empathy and compassion. Facing death itself produced an awareness of my own mortality I will never forget.

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The Right to Die—An Individual's Perspective

STEWART A. KING, M.D.

THE right to privacy and freedom of choice have been hotly debated for many years before 1973, and for all of the 20 years since. Occasionally the focus of that debate has shifted away from abortion, and end-of-life decision-making has taken center stage.

Many of those who read this are aware of Dr. Timothy Quill and his presentation, in an article in the *New England Journal of Medicine*, of the case of Diane.[1] A patient terminally ill with leukemia, Diane had chosen not to be treated, and Dr. Quill, at the patient's request, had prescribed a lethal dose of barbiturates.

My letter affirming my support for Dr. Quill's position and his actions was subsequently published in the *Journal*[2] and excerpted in his book *Death and Dignity: Making Choices and Taking Change*, and I take the liberty of introducing much of that letter's content here.

> Who better than the individual can decide when the burdens imposed by illness on oneself, one's family, and society can no longer be justified by any possible contribution to the well-being of anyone? Transient extremes of depression are correctly resisted by all; nevertheless, to the patient, there has to be an acceptable reason for carrying on.
>
> Of course, I agree that the decision to seek death must be challenged by the medical profession and the family, but if no valid rationale can be offered for sustained existence, what then? Can the profession justify simply walking away from the problem? I think not.
>
> Why should a spouse or child, or a dedicated health professional, be subjected to threat of legal proceeding for easing the suffering of a desperately ill individual who consciously and rationally asks that his or her anguish be ended?

The prohibitions in the Hippocratic Oath against the giving of a deadly drug and against abortion may pose a problem for some in the profession. My response is that we all practice medicine in ways vastly different from 20 years ago, that today's practice would be almost incomprehensible to the practitioner of a century ago. In light of the immense changes in the society in which we live, and the explosion of medical knowledge which we find available, why should these ancient restrictions be regarded as cast in stone?

As all of you know, since the publication of Dr. Quill's article in 1991, the debate on this issue has reached a national forum with the appearance on the scene of Dr. Jack Kevorkian and his "suicide machine." What you may not know is that, in the state of New York, Dr. Quill was subjected to criminal suit, in which he did ultimately prevail.

Joseph Healey, J.D., in his recent series on End of Life Decisions, cited Alan Meisel in stating that the legal consensus has apparently been reached on eight points.[3] The first seven of these discuss individual rights, and the rights of the competent *v* the incompetent. I will not deal with these. The eighth and final consensus point is, however, all encompassing. To paraphrase, it states that all of the foregoing individual rights are applicable only with respect to the termination of life support mechanisms.

Healey, Meisel, and most of us, as well as most public figures would agree that there is no consensus on physician-assisted suicide or voluntary euthanasia.

I do not, and I doubt that most physicians, dispute Dr. Kevorkian's integrity or his sincerity. You may share with me the distaste I have for the term "suicide machine," and you probably are as uncomfortable as I am with the fact that Dr. Kevorkian is not a clinician, and that he has had no long-standing relationship or knowledge of these patients. Further, you are probably as unhappy as I about the polarization that Dr. Kevorkian's outspoken opinions and forthright actions have brought about.

STEWART A. KING, M.D., general surgery, retired, ALS—quadriplegic, ventilator dependent, 27 Harbor Road, Darien, CT 06820.

Nonetheless, the very fact that individuals from all walks of life, from all parts of this country, have come to Michigan to seek out "Dr. Jack and his suicide machine," bears its indelible and irrefutable message. Either there are not enough truly caring physicians, deeply involved with the welfare of these their terminally ill patients, and I simply do not believe that, or the threat or real risk of legal prosecution is great enough wherever they practice to dissuade many physicians from assisting patients with these end-of-life decisions. Either way, there is something wrong with the way the problem is being handled.

You and I know, and I accept the fact that some will disagree, that discontinuation of life support, or the sometimes quite arbitrary decision never to institute it, is an every-day determination that is being made in this state, by physicians, frequently without consulting the family or the patient or an ethics committee. I know it happens. I think it is necessary. And I believe it should be structured, and it should be legal.

The step beyond the decision not to employ, or to discontinue, life support, to assist in suicide, or euthanasia, is really the sole arena of debate. I believe it should not exhibit the divisive characteristics that other hotly contested public issues have demonstrated. What we should be talking about is an individual's right to choose, with advice, with consultation, never alone, to ask a physician's assistance in ending a life that has become intolerable to that individual.

When death is clearly the determined rational choice of the patient, assisting with that choice, whatever the means, is an act of compassion, not an execution. Unlike abortion, there is no other life at stake. Unlike ethnic cleansing, which others tend to interject into a discussion of euthanasia, what I am about to discuss is a matter of the deliberate, considered choice of the individual only.

In all of medicine there are obvious, easy choices and there are tenuous, difficult ones. All of us who practice medicine live and have lived comfortably with those choices. The easy ones we make daily by ourselves. For some of the difficult ones, those we cannot solve by simple evaluation and review, or refreshing our minds by reading, we seek advice by consulting confreres, or, in the most problematic of cases, the opinion of outstanding authorities.

Why should end-of-life decisions be any different? Every one of us has been involved in incidents in which, after attempts at resuscitation are met with failure, life support is never even considered. We do not need or ask a committee to determine when to terminate a code. How many times have you, the reader, written a "Code No" order, or its equivalent, for one of your patients without extensive or even any formal consultation with the family? I certainly have, and I suspect most of you have, too.

I have a problem with much of the discussion that is taking place publicly and in private today on this topic. I see little difference between the physician's right, indeed obligation, not to unduly prolong life, by being willing never to start, to discontinue, or to prohibit, the use of life support, and the prescription of a lethal dose of drugs, whether intended solely for the relief of pain or the provision of comfort, or ordered deliberately hoping for the "unintended effect" of death, or even the use of the "suicide machine." All, to me, are acts of commission.

Dispute over the method is both meaningless and senseless to me. The focus must be on the root goals and the implicit prohibitions that each of us adopts when we choose medicine as our life work. I am afraid that I have no universal answers that are as good as those of much brighter people who have for generations preceded me in this discussion. The very fact that the discussion persists today among dedicated, very capable physicians is, in and of itself, an indication that, if there is anyuniversal answer, it is that there is none.

Physicians must make the difficult decisions based on their ethical, moral, and religious codes. There is no confirmed morality in medicine that can help us with these decisions. Just as we differ and have differed, on what each of us thinks are very good grounds, on the atomic bomb, Vietnam, politics, Bosnia, and abortion, so we are bound to differ on those individual decisions we make in our patients' behalf when the end of life is near. My initial plea then is for the tolerance for each other's beliefs that should be the hallmark of civiliation, but all too frequently is not.

Having now denied the existence of universality and then established one, let me attempt to expose end-of-life problems from a truly affected individual's standpoint. Much of my general philosophy I have already revealed today and in my letter to the *New England Journal*.[4] There are, however, a number of specific but resolvable problems.

The first of these: Accepting the fact that there will be no universally agreed upon philosophy by either society or the profession, there is need, nonetheless, for a set of broadly permissible criteria that can be understood by patients and used by physicians.

Problem two: Given acceptable criteria, the profession must establish an institutional review mechanism for the troublesome cases to protect the patient, the family, the doctor, and society.

And the third: There has been tacit acceptance by our society of the physician's judgment in exercising termination-of-life support decisions. To my knowledge, no case to date has been won against a physician when brought under these circumstances. Yet, in most jurisdictions, such activity is apparently illegal. This should be changed.

Because establishing the criteria is both the responsibility of the medical profession and the most critical of the three, I will discuss the problems in reverse order.

I cannot solve the legislative problem. I will only deal with it by stating that, when the profession, with legal aid, has developed criteria and methodology and these are in place, a concerted effort should be made to win legislative approval and modification or elimination of the current restrictive laws.

The review mechanism can also be dealt with easily because most hospitals already have, or should have if they do not, ethics committees. These would be the obvious bodies to whom the task of developing criteria should be delegated, and to whom the referral of difficult cases would be made for adjudication. Some of the criteria already exist in our minds, if not on paper.

What constitutes a reasonable "Code No" or "DNR"? Persistent vegetative state, do not resuscitate; request by the patient and/or responsible family. Termination of life support, including tube or intravenous feeding, now has precedents in the law. Surely medicine can agree on those. More difficult: the terminally-ill patient with intractable pain unrelieved by medication short of lethal dosage.

Those are easy. Can we afford the reassurance to the terminally-ill patients who have no pain now but are desperately afraid of pain the future may bring, that we will not let that pain overtake them? Harder. And harder still, Diane, the patient who asks your help, nearing death, no longer functional at a level acceptable to herself.

To these add a final dimension, the issue that society, the states, the nation, the health-care reform task force must confront. Who pays, can anyone pay for long-term care of the chronically ill, at home or in nursing homes? Increasingly, despite advocates to the contrary, private insurers are finding this too costly an area, and are opting out.

Day-time television is a vast wasteland with a single program on CNN that I can tolerate while I am fed my lunch. Recently, the psychologist hostess, during a telecast devoted to today's topic, interviewed, among others, a Ms. Marker, representing the Anti-Euthanasia League. One of Ms. Marker's objections to legalizing physician assisted suicide was that to do so would heighten the sense of rejection the chronically ill already feel. I wonder more, how great a sense of rejection failure to pay for long-term care under a national health insurance plan, will engender.

If society decides that it cannot afford the cost, and that lives like mine are not worth preserving, and I am not sure I can argue the cost-effectiveness of that preservation, must I then bankrupt my family to keep me alive? Must that burden of guilt be added to the phsycial and psychologic burdens I already bear, or does society then incur a corollary responsibility to enact legislation that will provide an avenue of escape for those like me who cannot help themselves?

I end with the final paragraph of my attestation to all the Dianes:

> When my continued survival is no longer meaningful (to me), I hope that a caring physician makes the transition as easy as possible. I realize that some health professionals will find it impossible to do this, but I hope that they and society will understand the true compassion for their patients' suffering which motivates those physicians who do help those in need. And I would hope that this understanding will lead to the elimination of unwarranted legal constraints when patient, family, and physician all concur.

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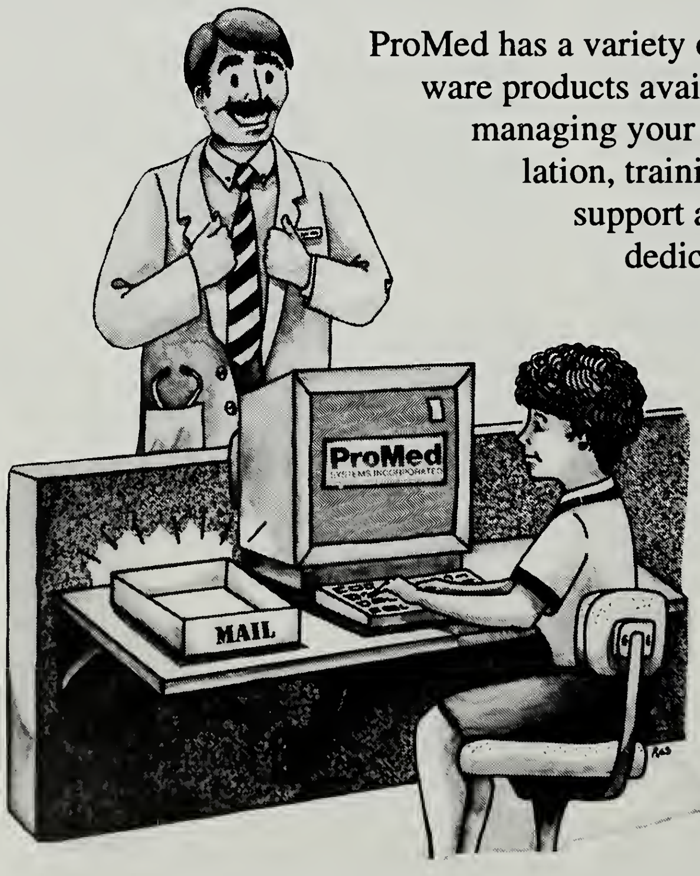

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Teenage Pregnancy and Birth Rates—United States, 1990

CENTERS FOR DISEASE CONTROL AND PREVENTION, ATLANTA

IN 1990, there were an estimated 1 million pregnancies and 521,626 births to U.S. women aged 15-19 years.[1] Because of the adverse health, social, and economic consequences of teenage childbearing, CDC analyzed data on teenage pregnancies and births.[1,2] These data will be used to monitor progress toward national goals and to assist in targeting program efforts to reduce teenage pregnancy.[2] This report presents pregnancy and birth rates for states by race/ethnicity for 1990 and compares rates with those for 1980.[3]

For this report, teenage pregnancy rates were defined as the sum of live births and legal induced abortions per 1,000 women aged 15-19 years. Teenage birth rates were defined as the number of live births per 1,000 women in the age group, and abortion rates, as the number of legal induced abortions per 1,000 women. Information on births was obtained from 1990 birth certificates, and on abortions, from state reports to CDC. Births were reported by state of residence, and abortions, by state of occurrence. Numbers of women aged 15-19 years were obtained from unpublished tabulations provided by the U.S. Bureau of the Census. Because the numbers of abortions by age of women were not available for 10 states, pregnancy rates for women aged 15-19 years could be calculated for only 40 states and the District of Columbia (DC); birth rates were calculated for all 50 states and DC. For this analysis, pregnancy and birth rates were calculated for white, black, and Hispanic women (pregnancy rates were calculated only for the 30 states where information on abortions was available by race and ethnicity of women)*; rates for other racial/ethnic groups were not calculated because the numbers of pregnancies and births for other groups were too small at the state level to compute reliable rates. In addition, abortion data were not available for other racial/ethnic groups. Differences in rates for 1980 and 1990 are statistically significant at the 0.05 level.

During 1990, pregnancy rates ranged from 56.4 per 1,000 women aged 15-19 years (North Dakota) to 110.6 per 1,000 (Georgia)†; birth rates ranged from 33.0 per 1,000 women (New Hampshire) to 81.0 per 1,000 (Mississippi) (Table 1).

Pregnancy and birth rates were generally higher for blacks than for Hispanics and whites (Table 1), although these rates could not be adjusted for socioeconomic or educational status of mothers. For blacks, in the 24 states for which rates could be calculated, pregnancy rates ranged from 103.9 per 1,000 (West Virginia) to 217.9 per 1,000 (Minnesota); for Hispanics (20 states), rates ranged from 56.2 per 1,000 (Tennessee) to 142.1 per 1,000 (Arizona); and for whites, (30 states) pregnancy rates ranged from 46.0 per 1,000 (South Dakota) to 105.6 per 1,000 (Nevada).

From 1980 to 1990, pregnancy rates declined significantly in 21 of the 40 states and in DC (Figure 1). However, rates in 14 of these 21 states decreased less than 10%. During the decade, pregnancy rates significantly increased in 12 states, and six states reported increases of more than 10%.

Morbidity and Mortality Weekly Report, Vol. 42, No. 38, October 1, 1993.

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*Because of data-collection methods for 1990 abortions, Hispanic origin was not reported separately by race. Abortion data for Hispanics were included with whites for pregnancy rate calculations because 97% of Hispanic women who had a live-born infant in 1990 were white.[1] Six states (Kentucky, Louisiana, Maine, Maryland, North Carolina, and South Dakota) did not report Hispanic origin.

†DC is not included in these comparisons because its pregnancy and abortion rates were higher than for any state, in part because of large numbers of abortions among nonresidents.

Table 1.—Pregnancy rates* and birth rates† for 15-19-year-olds, by race/ethnicity§ and state—United States, 1990

	Pregnancy rate				Birth rate			
State	**White¶**	**Black**	**Hispanic**	**Total****	**White**	**Black**	**Hispanic**	**Total****
Alabama	††	††	††	††	55.3	105.3	33.8	71.0
Alaska	††	††	††	††	53.8	§§	§§	65.3
Arizona	96.3	147.7	142.1	100.3	72.3	115.1	123.3	75.5
Arkansas	82.6	157.1	§§	98.3	66.2	131.9	§§	80.1
California††	††	††	††	††	73.9	101.0	112.3	70.6
Colorado	¶¶	¶¶	¶¶	82.0	52.1	105.9	110.6	54.5
Connecticut	††	††	††	††	30.5	102.5	121.9	38.8
Delaware	††	††	††	††	37.4	120.4	§§	54.5
District of Columbia	††	††	††	252.0	11.8	121.4	88.7	93.1
Florida	††	††	††	††	52.9	135.0	60.2	69.1
Georgia	86.0	162.2	87.5	110.6	56.6	116.2	73.0	75.5
Hawaii	¶¶	¶¶	¶¶	88.2	42.0	§§	§§	61.2
Idaho	58.5	§§	126.0	58.8	50.3	§§	118.6	50.6
Illinois	††	††	††	††	44.3	144.2	94.8	62.9
Indiana	65.1	157.2	76.4	74.3	51.9	122.4	64.5	58.6
Iowa	††	††	††	††	38.5	119.1	79.9	40.5
Kansas	74.3	180.9	99.3	81.1	50.8	131.9	86.1	56.1
Kentucky	84.1	163.6	††	90.9	63.5	115.8	§§	67.6
Louisiana	68.5	128.5***	††	92.0	52.1	109.1	20.9	74.2
Maine	67.5	§§	††	68.3	42.7	§§	§§	43.0
Maryland	61.1	141.2	††	84.7	36.0	95.5	46.0	53.2
Massachusetts	††	††	††	70.9	30.9	89.5	121.1	35.1
Michigan	††	††	††	85.1	43.1	131.1	94.4	59.0
Minnesota	54.6	217.9	89.9	61.9	30.6	151.7	79.4	36.3
Mississippi	71.6	130.5	§§	97.8	55.5	112.7	§§	81.0
Missouri	64.7	197.4	57.0	82.6	50.3	143.9	46.4	62.8
Montana	¶¶	¶¶	¶¶	81.7	39.7	§§	§§	48.4
Nebraska	††	††	††	74.2	36.9	135.1	81.7	42.3
Nevada	105.6	156.8	112.8	107.4	68.9	129.3	107.5	73.3
New Hampshire	††	††	††	††	33.1	§§	†††	33.0
New Jersey	52.6	181.3	114.9	75.3	28.1	99.6	79.9	40.5
New Mexico	99.5	115.5	122.1	100.4	75.6	94.6	96.9	78.2
New York	74.6	162.4	134.3	92.4	36.7	75.6	81.6	43.6
North Carolina	84.9	155.1	106.1	105.8	52.0	106.6	106.1	67.6
North Dakota	50.4	§§	§§	56.4	29.2	§§	§§	35.4
Ohio	58.2	162.7	81.5	73.2	47.7	129.4	73.9	57.9
Oklahoma	††	††	††	††	60.2	116.0	†††	57.9
Oregon	87.4	175.5	133.2	89.0	54.0	108.0	113.9	54.6
Pennsylvania	††	††	††	74.6	35.1	124.8	126.1	44.9
Rhode Island	79.9	198.3	134.9	87.7	38.7	114.3	129.8	43.9
South Carolina	76.6	127.0	84.5	95.0	54.3	101.1	66.8	71.3
South Dakota	46.0	§§	††	56.9	35.0	§§	§§	46.8
Tennessee	86.0	165.1	56.2	101.8	60.3	121.3	40.9	72.3
Texas	96.0	153.4	124.5	102.7	70.6	114.0	103.8	75.3
Utah	62.0	§§	128.7	62.9	47.8	§§	115.0	48.5
Vermont	72.4	§§	§§	72.1	34.3	§§	§§	34.0
Virginia	70.2	148.8	74.4	86.4	41.1	98.5	55.5	52.9
Washington	¶¶	¶¶	§§	95.4	52.2	94.3	113.4	53.1
West Virginia	66.4	103.9	††	67.4	57.1	74.4	§§	57.3
Wisconsin	††	††	††	66.5	31.2	174.7	90.4	42.66
Wyoming	††	††	††	62.2	54.5	§§	94.2	56.3

* The sum of live births and legal induced abortions per 1,000 women aged 15-19 years.

† Live births per 1,000 women aged 15-19 years.

§ Persons of Hispanic origin may be of any race.

¶ For calculation of pregnancy rates abortions by white race included women of Hispanic origin. Six states (Kentucky, Louisiana, Maine, Maryland, North Carolina, and South Dakots) did not report abortion data by Hispanic origin.

** Includes all racial/ethnic groups.

†† Because abortion data were not available pregnancy rates could not be calculated.

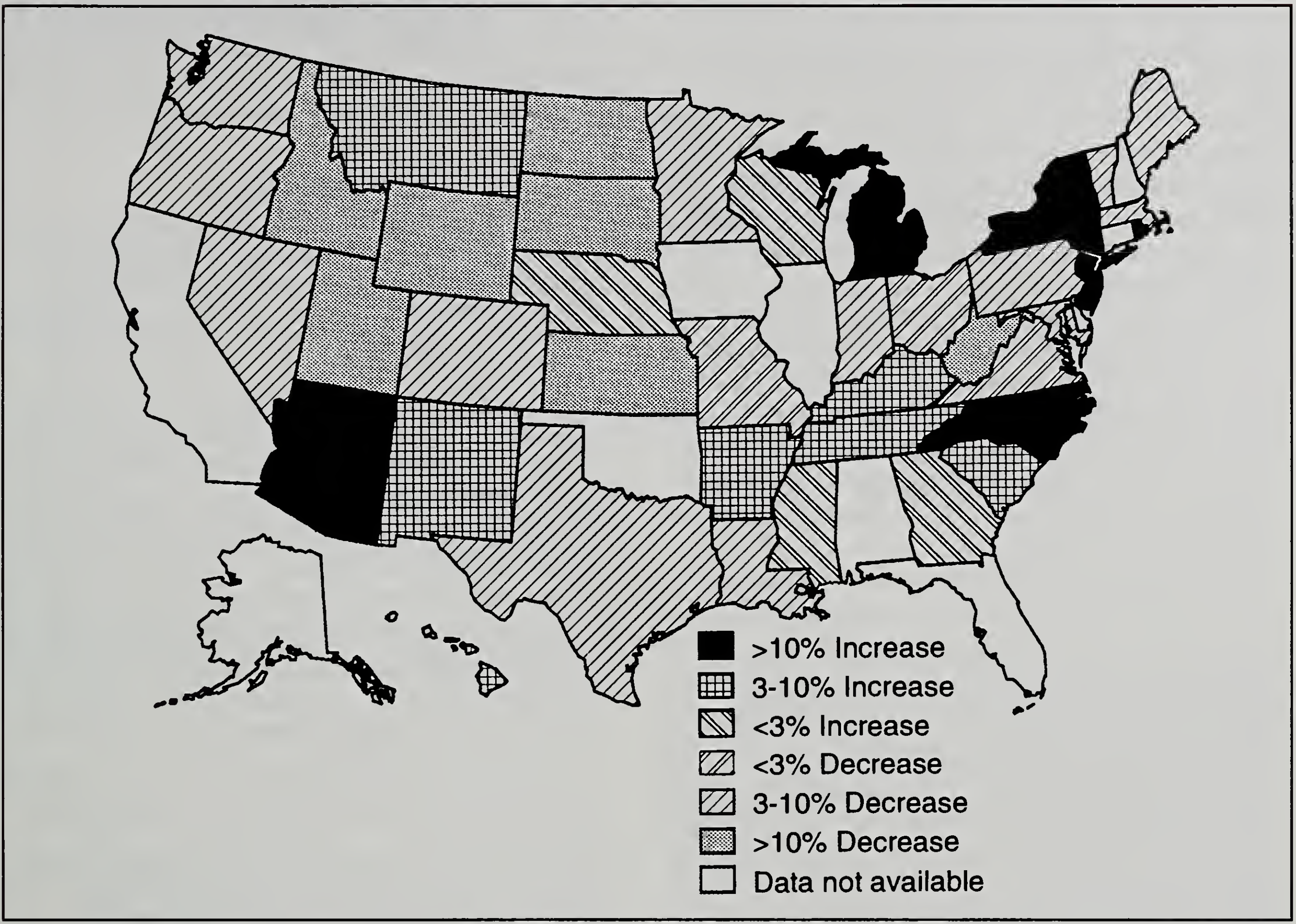
§§ Rates are not calculated for states with 20 or fewer births to women aged 15-19 years in 1990, or 1,000 or fewer women aged 15-19 years in respective racial/ethnic group.

¶¶ Rates not calculated because 15% or more of the abortions were to women of unknown race/ethnicity.

*** Abortions include all races other thean white.

††† Hispanic origin was not reported on the birth certificate.

Figure 1.—Percentage change in pregnancy rates from 1980 to 1990 for 15-19-year olds—United States*



*The percentage change was not statistically significant in Maine, Mississippi, Missouri, Montana, Nebraska, South Carolina, and Wisconsin.

From 1980 to 1990, significant declines in abortion rates occurred in 26 of the 40 states and in DC. In 23 of these, the declines were more than 10%;15 reported decreases of more than 20%. Abortion rates significantly increased in eight states; in five, increases were more than 10%.

In most states, birth rates increased from 1980 to 1990 because declines in abortion rates generally exceeded those of pregnancy rates. Birth rates significantly declined in 13 states§; in eight of these states, the decrease was more than 10%. In contrast, birth rates increased significantly in 29 states and in DC.¶ Rates in 20 areas increased more than 10%; of these, rates in nine increased more than 20%.

Reported by: Behavioral Epidemiology and Demographic Research Branch, Statistics and Computer Resources Branch, Women's Health and Fertility Branch, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion; Natality, Marriage, and Divorce Statistics Branch, Division of Vital Statistics, National Center for Health Statistics, CDC.

Editorial Note: Despite national goals to reduce teenage pregnancy in the United States,[2] pregnancy and birth rates in the United States in 1990 exceeded those in most developed countries (Alan Guttmacher Institute, unpublished data, 1988;[4]). Small declines in pregnancy and birth rates during the early 1980s subsequently reversed, resulting in little net change in the U.S. teenage pregnancy rate over the decade.[1,5] From 1986 through 1990, the U.S. birth rate increased nearly 20%, suggesting that a larger proportion of teenage pregnancies resulted in live births.[1,6] Other factors that may have affected pregnancy and birth rates included trends in sexual experience among teenagers and variations in the accessibility and use of family-planning and abortion services.

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§Idaho, Iowa, Kentucky, Maine, Mississippi, Nebraska, North Dakota, Oklahoma, South Dakota, Utah, Vermont, West Virginia, and Wyoming.

¶Alabama, Arizona, Arkansas, California, Colorado, Connecticut, DC, Florida, Georgia, Hawaii, Illinois, Maryland, Massachusetts, Michigan, Missouri, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Virginia, Washington, and Wisconsin.

In 1990, teenage pregnancy rates in 10 states could not be calculated because those states did not collect data on the age of women obtaining abortions. However, these 10 states accounted for approximately 39% of all U.S. abortions in 1990. Births alone cannot be used as a surrogate for monitoring overall pregnancies. Because so many teenage pregnancies end in abortion and the rates vary widely by state, states that fail to collect abortion data by age will be unable to adequately monitor their trends in teenage pregnancy.

Differences in teenage pregnancy and birth rates by race/ethnicity may reflect differences in factors such as socioeconomic status, access to family-planning and abortion services, and the use of contraception. For example, during 1983-1988, Hispanic and black women were less likely to use contraception during their first reported premarital sexual intercourse than were white women (32% and 58% *vs* 70%).[7]

The personal and societal impact of teenage pregnancy in the United States is enormous; an estimated 84% of teenage pregnancies are unintended (ie, they occur sooner than desired or are not wanted at any time).[2] From 1985 through 1990, the public costs (eg, Aid to Families with Dependent Children, Medicaid, and food stamps) related to teenage childbearing totaled $120.3 billion.[8] Of this amount, an estimated $48.1 billion could have been saved if each birth had been postponed until the mother was at least 20 years old. For every public dollar spent on family-planning services for all women, an average of $4.40 is saved by averting expenditures on medical services, welfare, and nutritional services.[9]

More than 70 national health and social welfare organizations support age-appropriate comprehensive school health-education programs to reduce teenage pregnancy.[10] These programs counsel abstinence as well as provide teenagers with the knowledge and skills they need to avoid unplanned pregnancy. In addition to health education efforts, family-planning services for sexually active teenagers are essential for reducing teenage pregnancy.

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Guest Editorial

Outcome Measures, Quality and Health Care Reform

"... medical decisions are enormously complex ... it is virtually impossible to estimate the outcomes with any certainty."[1]

In this editorial I address the "potential for misunderstanding and misuse of data that Outcomes Measurement may engender." The timing could not have been better. In early November I spent a week with the JCAHO reviewing the 1994 hospital accreditation standards. These new standards emphasize measuring outcomes to document and improve hospital quality of care. Writing this article is intended to clarify outcomes measurement and its relationship to quality management. Physicians should be increasingly aware of these new quality management processes and participate in them.

What is outcomes measurement?

Outcomes measurement may be defined as performance assessment. In health-care, outcomes measurement requires assessment of therapies, physicians, hospitals, and health care plans. Outcomes measurement, although only recently applied to the health care field, has been a significant component in quality management increasingly becoming an essential actuality in United States industry. Out-of-control costs raise serious questions about quality of health care. Answers to these questions require outcomes data. A startling lack of meaningful data about health care performance has stimulated a tremendous amount of research and quality management development.

In Boston early in this century, an innovative and cantankerous surgeon originated outcomes data collection on individual patients in order to assess hospital performance. Dr. Ernest Amory Codman emphasized coding and following each therapeutic intervention to evaluate the product of the hospital. His obnoxious behavior about the "End Results System" resulted in his being ostracized from medical society. Eventually his efforts were partially recognized and resulted in hospital standardization and the creation of the Joint Commission on Accreditation of Hospitals.[2] In order to evaluate the effectiveness of our health care today, medicine must measure the outcomes of various therapies, physicians, hospitals, and health care plans in much the same way that E. A. Codman proposed.

Data on outcomes in health care are currently inadequate. Although medical literature continues to proliferate, it has been stated that only about 15% of medical interventions "are supported by solid scientific evidence."[3] The resultant insufficient outcomes data results in tremendous variability of clinical management. Deficient knowledge and the resultant variability lead to a significant amount of inappropriate care and expensive care. Elimination of this inappropriate care could potentially cut as much as $100 billion from the health care budget.[4] A significant effort to improve health care outcomes measurement is being undertaken with the goal of improving patient care and reducing management variability as well as costs.

Outcomes measures important to our profession include multiple variables broadly categorized in two areas: medical care outcomes and health care outcomes. Medical care outcomes would assess patient mortality, quality of life, functional state, pain, and satisfaction. Health care outcomes would assess the overall state of the system of care, including the allocation of health care resources and performance of delivery systems. This article focuses on medical care outcomes that more directly affect physician and patient care.

What specific assessments are needed to improve patient care outcomes? Measurements in the following areas would be needed: efficacy, appropriateness, availability, effectiveness, timeliness, safety, efficiency, continuity, and respect and caring.[4] The basic questions include: Does the therapy work? Is it indicated? How well is it applied? Additional knowledge in these areas for any given diagnosis, therapy, or procedure would result in better knowledge about patient care. Use of that knowledge could improve quality, reduce variability, and decrease costs.

How will outcomes measurement affect your practice?

Increased knowledge about outcomes will make clinical decision making easier. A reduction in clinical uncertainty should result in increased patient confidence. Clinical decision processes are complex and rely on many variables besides outcomes measurement.[5] Even in clinical areas where outcome information is already available, variability in physician management remains high. Doctors relish their autonomy and change clinical behavior only with considerable pressure. Clinical utilization of outcomes research normally would take several years. Earlier employment requires alternate methods of modifying clinical behavior. Practice guidelines based upon expert panels and outcomes research will be set up to facilitate the use of outcomes knowledge to improve quality and efficiency. Such measures would not be designed to standardize practice but to increase more quickly the application of available knowledge. Physicians would be required to document their rationale for variance from the guidelines. As stated by Donabedian "... monitoring implements professional accountability and contributes to rational management by documenting the quality of the product."[6]

What should I do about outcomes measurement?

Individual physicians need to be intensely involved in the performance evaluation of the care they provide to their patients. Only with intensive involvement of the clinician can relevant evaluation occur. A lack of physician participation in the assessment processes results in faulty priorities, orientation to irrelevant issues, and a general inability to make progress. Involvement signifies a commitment to the improvement of health care for our patients.

Not only is the physician critical to the process, but other health care team members must be involved as well to change the systems of delivery. In addition, patients must also participate, for they more clearly recognize many aspects of quality that the providers cannot discern. The outcomes measurement methods work best with interdisciplinary integration for prioritization of issues, data collection, and analysis of results and achievement of changes.

Will Quality of Care Be Improved?

Outcomes measurement and the quality management process hold great promise for our profession. Previous methods of maintaining health care quality have not always met public demands. Health care reform promises change. Only with improved quality management methods can this change occur without loss of quality. The most ardent reformers as well as the most vocal conservatives wish to retain the highest quality of care that we can afford. To achieve this goal, we need to define it, measure it, and distribute the results. Outcomes measurement and the quality management processes need your involvement to achieve this goal!

Daniel K. Lowe, M.D.
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50 Years Ago

From *The Connecticut State Medical Journal*

December 1943

How the Flying Fighters' Doctor is Made

EUGEN G. REINARTZ, *Brigadier General, AUS, Commandant,*
The School of Aviation Medicine

Presented before the Hartford County Medical Association April 6, 1943.

FOR eons of ages, man has watched birds in their solitary or massed flight and has waxed poetic in his expression of wonderment, and marveled at the precision of their unerring flight. However, man is not biologically adapted by nature to such empyreal existence and must do mechanically that which the birds do naturally.

Nature in all her forms is harsh and man in his attempt to overcome nature in an element for which he was not fashioned, is waging a battle, which continually faces him with dissolution. Man's adaptability, however, has permitted him to do this successfully. Nevertheless, this mechanical adaptation creates stresses and strains that call for rapid adjustment to numerous situations depending on the degree to which man is physically and psychically able to adapt himself to his new task. As difficulties appear, they naturally fall into the medical field and the practice of medicine has been most closely linked with aviation since its inception. One cannot, therefore, discuss the one without telling the story of the other, at least in part. This is produced by the very intimate relationship between certain basic principles of aviation medicine, the fact that the pilot plays such an important role, and the success in the design, operation, and piloting of aircraft.

It might be well to say something of the types of individual, in my experience, to whom flying appeals. These are the adventurers, the individuals looking for excitement and the thrill of flying—the extrovertive nomads, who go out to meet reality with a vengeance and enjoy the exhilaration that accompanies flying. Then there are those introvertive types, who by reason of the glamour associated with aviation, attempt to compensate for their deficiencies by endeavoring to excel in a profession that has such popular acclaim. The compensated introvert—the stable, thinking-feeling type is the ideal type. It is the type that wears well through the stresses and strains incident to flying. However, in those who are not able to adjust themselves, difficulties arise and this is readily understood when one realities the problems with which the beginning flyer, particularly, is faced. These individuals, developing difficulties, manifest them for the most part in the mental field and their reactions will dependent upon their particular personality types.

A great many of the difficulties experienced by the embryo flyer, and by those of more mature flying experience are based on a conscious or unconscious fear. Since sickness from time immemorial has been the one and only universally accepted excuse from work, so individuals engaged in flying when they break, frequently, unconsciously, fly into disease. If their personality type is such as to preclude this method of reacting, they may respond by a withdrawal and the development of an anxiety state, a fear reaction, or psychic panic, or reactive depression.

Since the development of symptoms lies largely in the mental field, one may encounter all sorts of hysterical manifestations, anesthesias, paralyses, blindness,

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From the *Connecticut State Medical Journal*, December 1943.

contractures, deafness, airsickness, headaches or manifestations of bodily disease.

The symptoms of disease encountered in flying personnel are the same as one finds in civil life, and yet they may well be compatible with terrestrial existence, while their development in aviators would be incompatible with flying.

There are few occupations which so frequently subject those engaged to such marked shocks as does aviation—crashes, fatigue, anoxia, the effect of terrific speeds, the application of gravitational forces, the so-called "G," loneliness when flying at extreme altitudes, the effect of numbing cold, and finally combat. The hazards that continually face flying personnel from the time of take-off until a successful landing has been made, especially in time of war and operational assignments, are such as to jeopardize their mental and physical well-being, yes, even their lives.

This, then in brief, is a partial statement of the problems with which a fighting flyer's doctor is faced. How has this problem been met by your Government and by those upon whom the training of the pilot's doctor had devolved?

Early in World War I, the British in an analysis of their air accidents arrived at the conclusion that 2% of the fatalities were due to enemy action, 8% were due to structural failure, while the overwhelming 90% were due to defects in the pilots themselves. This sharply focused the attention of the authorities on the medical aspects of aviation and resulted in aviators being selected with greater care, with particular stress laid on their mental make-up as well as a consideration of those qualifications that are distinctly physical. It is a matter of record that as a result of the examination then instituted, the proportion of those killed in aircraft accidents in which the charge might be laid to the pilot himself, was reduced to 12%. Physical standards in the United States Army were first developed in 1914 but nothing much was done concerning them until 1917. No medical officers were trained especially for the selection and care of the pilot until the latter part of that year when special examining teams were organized and a Chief Surgeon was appointed for the Aviation Section, Signal Corps, as the Air Forces were then known.

Early in 1918, a Medical Research Laboratory was formed at Hazelhurst Field, Mineola, Long Island. This was the progenitor of the present School of Aviation Medicine and here was given the first formal instruction in the United States, to medical officers, who were to select and care for pilots. The School of Aviation Medicine has just last week celebrated its 25th anniversary with appropriate ceremonies.

In 1918, following the death of Major Ream, MC, the first medical officer to be killed in an airplane crash, the name "Flight Surgeon" was born. In 1919, the Medical Research Laboratory was expanded and a teaching section was added for the purpose of training those who, upon graduation, were to be designated as "Flight Surgeons." It must be remembered that in the Army all medical officers are designated as surgeons, whether they perform surgical operations or not and the term "Flight Surgeon" does not, therefore, signify an individual who performs surgery solely on flying personnel except in its broadest application.

Since the Flight Surgeon is assuming such an important place in the war effort and his duties are bulking large in the ever expanding Air Forces, it might be well to speak of him, through whom the impetus for the modern advances in Aviation Medicine, was given.

Even to the present and without a doubt in this and in the listening audience, there are many who fail to realize or have never known previously who and what a Flight Surgeon is.

He is a doctor who is assigned to Air Forces duty and who must be a graduate of the School of Aviation Medicine; he is a picked man, of high ideals, young, under 35 years of age for the most part, energetic, robust and with a sincere desire to practice Aviation Medicine. He must be an example to others, of pleasing personality and with the ability to make friends. He must be in excellent physical condition and have a liking for athletics in which he must show dexterity. It is insisted that every Flight Surgeon must engage in flying, so that he has a proper personal appreciation of the problems that beset the pilot. He must not be a "fair weather" flyer but rather one who is willing to and does experience all the vicissitudes of wind, weather and altitude to which the pilot is subjected. In no other way is a Flight Surgeon able to get into such close contact with his flying personnel as when he "goes on cross country" with his pilots, especially if the flight has been a hazardous one where the safety of both or of the entire air crew, has been jeopardized.

It is mandatory that the Flight Surgeon have a solid foundation in general medicine complemented by a large fund of special knowledge. So equipped, he will have poise and dignity and his judgments will carry weight and his opinions will be respected. Furthermore, a Flight Surgeon, so implemented will inspire confidence in the flying personnel whom he has to examine and with whom he must be in the closest contact. He must be free from prejudice, racial, religious, political, and show no favoritism. He must be courageous and be prepared to defend his opinions with facts and logic. He must be just, firm, and tolerant, always keeping an open mind. His loyalty and integrity must be unquestioned. His understanding of human nature must be profound so that those with whom he associates will instinctively turn to him for guidance and advice. A good Flight Surgeon, therefore, must be a combination of an outstanding physician, priest and lawyer with a strong leaning toward the psychopathological side of medicine.

In the past a Flight Surgeon was taught those things that were believed to fit him for peacetime duty with the Air Forces. Since all Flight Surgeons during peacetime were regular Army officers, only certain subjects were deemed essential in the curriculum, with the remainder of his knowledge to be gotten by actual experience in association with the personnel of the organization to which he was assigned.

Throughout these years, the School of Aviation Medicine quietly has been training those who now occupy commanding positions and who give direction to the present training of those who are to care for our pilots on the battle line.

A Flight Surgeon has four principal duties. First and foremost, he must be an outstanding physician so that he may care for his personnel from a medical standpoint. When it is at all possible, he should be the family doctor and in this way come into closer contact again with his pilots, knowing them in their relaxed home environment. Secondly, his is the duty of selecting those aviation cadet applicants who would become pilots. He is also charged with the maintenance and care of pilot personnel so that as far as lies within his power, his flyers will always be ready to take to the air. Lastly, his is the responsibility of making such investigations and research into those medical problems which beset the pilot and for which no solution has been achieved as yet.

In 1926, one of the most far reaching contributions to aviation was made, in my opinion second only to flying itself, by a Flight Surgeon working in conjunction with an Air Corps officer. They correlated the illusions of the senses as related to the internal ear with the large number of crashes that had been occurring. This resulted in the formulation and promulgation of the principles of blind or instrument flying and was the basis for tremendous upswing in aviation. It is my opinion that as the years pass, the names of these two officers will be emblazoned in the Halls of Fame and they will be placed on pedestals with other outstanding figures in aviation history.

Realizing the need for organized research, in 1929, the speaker began experimentation on a modest scale at Wright Field, Ohio, investigating the deleterious effects on flying personnel of noxious gases created by gasoline combustion and the breaking down of oils; the effect of flight on hearing; the development of corrective segments in goggles for those pilots who were becoming presbyopic and began studying the condition that was later designated as aeroneurosis.

This meagre beginning came to fruition with the development of a physiological research unit at Wright Field in 1935. At that time, this was the only laboratory doing any medical research work, primarily, in connection with problems concerning aviation. With the organization of the physiological research unit, a new chapter in aviation medicine was begun. The research work carried on by this. laboratory had and now has for its solution problems having to do almost exclusively with the pilot in the air—clothing, parachutes, masks, oxygen equipment, food, goggles, first aid packets and many other problems, the nature of which is confidential.

Although the primary purpose of the School of Aviation Medicine is that of training medical officers for duty with the Air Forces, it was inevitable that investigations of various types should be carried on at this school as well.

The School of Aviation Medicine throughout the years had been attempting to solve some of the problems with which Flight Surgeons had been faced, studying the various effects of flight upon personnel and attempting to devise equipment to obviate these effects. However, its efforts were devoted largely to its routine medical duties; to problems having to do with physical standards, and the faculty found itself engrossed in these, almost to the exclusion of all other considerations. The school also was occupied in developing Flight Surgeons for duty at the increasing number of Air Corps stations and stressed particularly the selection and physical care of Air Corps personnel.

The School of Aviation Medicine laboratory in contrast with the one at the Materiel Division, Dayton, Ohio, has latterly had for its goal the solution of problems concerned with the selection of applicants for air crew training and for a determination, if possible, as to what physical and psychological characteristics are necessary for those who would aspire to become military aviators. Both laboratories have moved into recently built commodious quarters, of permanent construction, equipped with the very latest of research facilities with which to work.

The School of Aviation Medicine as now constituted consists, therefore, of a teaching section and a research section. This division is not as sharp as it might seem at first glance, for most of the personnel participate both in teaching and in research.

Progressive teaching institutions must frequently change their curricula to keep abreast of the times and project their studies so as to meet ever changing situations. This has been true of the School of Aviation Medicine since its inception because new problems or new phases of older problems were arising continually in the Air Forces. In the recent past, however, powerful forces have been brought to bear on the institution with the result that several major alterations and more than the usual number of minor ones have been and are continuing to be made in the schedule during this period.

The most important of these forces has been the advent of war, which has brought with it a whole train of significant events which in turn have affected the school by reason of their effect on flying personnel. Among these may be mentioned the progressive multiplication of the quantity, range, and altitude of airplanes, the tremendous expansion in the numbers of Air Forces personnel; the worldwide theater of operations of the Army Air Forces; and the consequent increase in the number of medical officers who have had to be trained to carry this additional burden.

The almost simultaneous increase in the number of medical officers entering the school and the creation of the Aviation Cadet Classification Centers were circumstances of which the Commandant immediately took advantage. The course in residence at the school, prior to the declaration of war was three months in length and given entirely at Randolph Field, three classes being conducted each year. With large groups of Aviation Medical Examiner students now present, and the consequent increase in the number of examinees needed, it often was impossible to get sufficient cadet applicants for the proper training of the medical officers in attendance at the School of Aviation Medicine. Enlisted men, not at all interested in being subject for physical examination, had to be used, and situations developed which were frequently not entirely satisfactory. The creation of the Classification Centers with the tremendous number of cadets being processed daily, changed all this and made it possible to divide the course into two equal parts each of six weeks' duration. At present the first six weeks of a Flight Surgeon's training are devoted to didactic work at the school at Randolph Field. Here the theoretical aspects of aviation medicine are stressed and sufficient practical work and demonstrations are given to make the student reasonably proficient in the handling of the instruments he will be called upon to use.

The second six weeks or the practical portion of the course is given at the Branch Schools at the Army Air Forces Classification Centers at Nashville, Tennessee; San Antonio, Texas; and Santa Ana, California. The class, following the completion of the theoretical portion of its course, is divided into three relatively equal parts, one section being sent to each of the Classification Centers mentioned. At the Classification Centers, the section is divided again into three groups, each group spending two weeks performing certain prescribed practical work. All three sections are rotated so that all students get the same training. During the first two weeks, they perform the physical examination in the processing line of the Center and are rotated from station to station, in that line, so that at the completion of their two weeks' tour, they will have performed each part of the physical examination (eye, heart, chest, abdomen, bones and joints, equilibrium, ear, nose, throat, etc.) on hundreds of actual air crew applicants. In this way, the student fastens indelibly upon himself the technique of the complicated air crew examination.

The second two weeks are spent in investigating the mental make-up of these same aviation cadets, in order to determine the potentialities of the individual and to determine whether there is anything in his background that would make for failure in flying.

The last two weeks are devoted to the study of practical problems in connection with burns, ophthalmological injuries, fractures, dermatology, basic principles of plastic surgery, anesthesia in the field, identification of personnel involved in aircraft accidents as well as the operation of the various aid stations, defense against chemical warfare, Air Forces medical supply problems, practical field sanitation, air evacuation, and similar practical aspects of combat duty.

The arrangement described has accomplished much. It has made it possible for the student to make an adequate number of physical examinations for flying under supervision, without permitting him to become chronically fatigued by remaining on such a tedious routine for a prolonged period. It has made it possible to double the number of students undergoing instruction, and therefore, to double the number of graduates without the necessity of increasing the amount of equipment needed and finally it has made the school sessions continuous, one group leaving on Saturday with new classes beginning on the following Monday.

This is the manner of teaching those who are to select and care for our Air Forces personnel. Now briefly, you should be informed what they are taught. In the didactic work, the most radical changes have resulted from the need for greater emphasis on the maintenance of the flyer.

To better prepare the student who will have a combat assignment, so that he may carry out the proper care and maintenance of the pilot, the student is given a very comprehensive course in the diagnosis of heart disease, the physiology of respiration, the recognition of beginning staleness, tests for determining of physical efficiency and those conditions that evidence fatigue. In the past little attention was paid to intestinal conditions as peacetime flying was not the high pressure flying that is now being done. The incidence of peptic ulcer is low because the average age at which this disease manifests itself is somewhat above the age of the young fighter pilot. Nevertheless, the Flight Surgeon is taught concerning gastric conditions because of the almost daily missions at extreme altitude, the increasing problems of evacuation by air of abdominally wounded personnel; the psychic effect of prolonged dangerous missions on the function of the gut—these all have made it necessary to stress those conditions affecting the gastrointestinal tract.

Barometric pressure changes, coincidental with changes in altitude affect all closed cavities of the body. All gases undergo relative expansion during ascent and relative contraction during descent. One of the most important cavities so affected is the abdominal cavity. Much has come to light concerning the symptoms, the causes and dietary relationships of expanding intestinal gases on ascent.

The student is taught the dangers incident to the transportation at high altitudes of casualties who have recently undergone abdominal surgery. He is taught to be ever mindful of the possible contingencies in aerial transportation of cases of intestinal obstruction or such diseases where perforation of the bowel is not an infrequent concomitant. The psychic effects of combat missions not infrequently cause gastrointestinal symptoms such as pylorospasm and "irritable bowel." It is, therefore, necessary to indoctrinate the student in these matters so that he may adequately differentiate between functional syndromes and organic disease. Recent teaching with reference to physiology in general has been markedly influenced by the tremendous stresses and strains now being placed on the terrestrial animal called man. Operational ceilings have increased to 35 or 40 thousand feet, where atmospheric pressures are reduced to approximately one-fifth of sea level pressures; gravitational forces, both positive and negative, have been brought into play that never had been dreamed of in their application to the human body.

As one ascends to an altitude, the partial pressure of oxygen in the air becomes less and the air becomes "thinner"; above 20 thousand feet, one will lapse into unconsciousness without the use of supplementary oxygen. Above 30 thousand feet, one will die if additional oxygen is not administered. These altitudes are routine in bombing and fighter missions in the present war. By reason of these effects at the high altitudes at which flying is now performed, oxygen equipment had to be improved, to meet these increased demands. The use of this equipment, its limitations and the installations in tactical airplanes must he taught to the medical officer. He is kept abreast of advances in connection with pressurized cabins, pressurized suits, heated flying clothing and other devices for increasing the tolerance of man to the cold anoxic stratosphere.

Some of the most serious effects of cold upon the pilot are in the mental field as they cause distress due to physical discomfort. It is a numbing experience and creates a desire to cut short the mission. A lethargy creeps over the pilot quietly, quickly, but certainly, and if not relieved will end in stupor and possibly death. As part of the medical officer's training in connection with the aeroemphysema developing at high altitude, he is taught concerning decompression by means of which flying personnel are classified with respect to their ability to fly at altitudes and their tolerance to aeroembolism, the so-called "bends" of aviation. This is a procedure whereby pilots are placed in a large steel chamber and the air pressure is reduced and the partial pressure of oxygen is decreased in a manner simulating rising to an altitude. In some of these chambers any condition found at any altitude can be reproduced. At certain high altitudes, even with oxygen, nitrogen bubbles form in the blood stream, lodge in various tissues of the body and cause excruciating pains, and may cause the termination of a mission.

The Flight Surgeon himself is subjected to a flight in the high altitude chamber at simulated altitudes of 35 thousand feet for several hours, in order that he might obtain first hand information regarding the psychological and physical effects of this procedure, which is readily comparable to rising to the same altitude in an airplane.

With the obvious destination of most of the present graduates of the school in temporary bivouacs in all parts of the world, it has been necessary to familiarize the student with as many of the problems as possible that he is likely to meet in the field and which adversely affect the personnel for whom he is responsible. To this end, a course in "medicine in the field" has been added to the curriculum. It is divided into four important parts, military medicine, military preventive medicine, equipment in the field, and evacuation of wounded by air.

Military medicine includes the classification, diagnosis and treatment of shock with blood and blood substitutes, the newer conceptions in the treatment of burns, the use of, indications for, and the toxic manifestations of the sulfonamides, chemical warfare, flash burns, blast injuries and crushing injuries. Much time is spent in discussing the injuries to the head and face as these are so frequent in aircraft accidents and in aerial combat.

Military preventive medicine consists of lectures on aerial and general sanitation. Sanitary appliances for the comfort and well being of combat crews are practically non existent where our present war is being waged, except in England. The Flight Surgeon is shown how to prepare sanitary devices, to install improvised shower baths and such other conveniences that may make life more livable for his personnel. The Flight Surgeon must ever be on the alert by reason of the great dangers incident to the conveying of infected personnel or the transmitting agencies of disease by aircraft and the urgent need for and strict conformity with international sanitary regulations.

The demonstrations in connection with equipment in the field consist of acquainting the prospective Flight Surgeon with the tools with which he will have to work. He is schooled in the use of the flight service chest, the crash splint unit, the first aid aeronautic kit, the first aid parachute kit, squadron and group aid equipment. An Arctic rescue unit and the Jungle kit are demonstrated as he never knows to what climate or where he, with his personnel, will be assigned.

In regard to the instruction in connection with evacuation of wounded by air, he is taught the organization of the Air Evacuation Unit both for the field army and the task force. The relationship of this type of evacuation with other methods of evacuation used by the Ground Forces is discussed. Actual demonstrations of how an aerial ambulance is loaded, arc given and the method of operation of the same by the use of evacuation teams, including nurses is demonstrated. It is, furthermore, pointed out that certain types of cases are not evacuable by air and such cases must be avoided scrupulously when aerial transportation is being considered.

Since the present air war, as far as the United States Forces are concerned is primarily a tropical war, it is mandatory that all Flight Surgeons must, of necessity, be conversant with tropical diseases and conditions of jungle warfare; consequently, a course has been instituted to make the student aware of these conditions and to prepare him for any contingency with which he may be faced.

At the same time, by reason of prolonged active operations in arctic regions, it has been found necessary to make the student equally conversant with subzero weather effects on personnel. Many of these studies are made in cold chambers where the temperatures can be reduced to that comparable to the coldest weather experienced on the face of the globe.

In ophthalmology and otorhinolaryngology, changes in the recent teaching methods have also been made. Much consideration is given to trauma and burns of the eye, as well as the maxillofacial region, with particular emphasis placed upon the emergency treatment of these, and to the manner in which they are affected by air evacuation.

Since bombardment missions are carried out principally at night, night vision is explained in detail and the factors influencing it, such as, age, anoxia, alcohol, tobacco, recent exposure to light, cockpit lighting and Vitamin A assimilation are discussed. The Flight Surgeon is enjoined to indoctrinate flying personnel so that operational personnel may function at night with the greatest possible degree of visual efficiency.

With the advent of faster climbing and faster diving pursuit, interceptor and bomber aircraft, the problems of aerotitis media and aerosinusitis have taken on new significance simply by virtue of the volume of cases that occur. These conditions result from the barometric pressure changes occurring particularly in rapid descent, and represent a physical process due to pressure differentials on the inside and outside of the ear drum. It is for the more rapid equalization of these air pressures that air line hostesses give passengers chewing gum when a landing is being made. In high speed operations, Flight Surgeons advise their pilots to yell, yawn, or swallow forcibly. Much time is spent on the recognition, prevention and treatment of these common ailments peculiar to high speed aviation.

Before the war, the aviation cadet applicant was given a mental examination with psychomotor tests, the same being conducted by a Flight Surgeon with adequate training in this method of investigation. The purpose of the examination was not to select aviators necessarily but to select those men who had the psychological make-up and stability necessary for them to learn how to fly, to become officers of the Army, and to withstand the psychological trauma inherent in aerial combat.

Because of the rapidly expanding Air Forces, the personal interview early had given way to a questionnaire which the applicant accomplished. At the Classification Centers, aptitude for training as a pilot, as a bombardier or as a navigator is determined by a battery of psychological pencil and paper tests and a number of psychomotor tests. The result of these tests when correlated with success in flying is a coefficient of correlation between 0.3 and 0.4. They are, therefore, of value in eliminating those who probablv will not learn to fly. These tests, however, do not measure personality nor do they evaluate the individual as a functioning whole. It has, therefore, been found necessary to reinstitute the neuropsychic examination so that a fully rounded picture of the applicant's psychosomatic make-up may be had. These changes have made it necessary to alter the program of psychological instruction at the school. In addition, greater emphasis is being placed on maintenance in the psychological sphere with the problems of operational fatigue, the relation of anoxia to fatigue, the psychology of combat operations and the psychological factors of importance in the development of the aeroneuroses and the war neuroses.

In the field of neuropsychiatry, tremendous strides have been made. The hazards involved in aviation have always made it a fertile field for the development of minor psychoses. Present and past experiences teach that the environment of war with the potent agent of fear always present, and the self preservative instinct constantly stimulated is also ideal for the development of mental disorders and for the activation of latent psychotic tendencies.

The triple threat of "aeroneuroses," "operational fatigue," "war neuroses," (these are three conditions, that are basically the same), and the obvious need I for maintaining all flying personnel at a high level of efficiency has resulted in greater emphasis being placed on early recognition and early treatment of psychiatric and psychoneurotic casualties. Detailed instruction is given at the school concerning the medical and administrative handling of neuropsychiatric cases in the Theater of War and in the Zone of the Interior. In aviational psychiatry as, in the other specialties, the problem of maintenance has become as important as the problem of selection.

It may be of interest to you to know that when a doctor has finished the prescribed course of study and is assigned to an Air Forces organization, he eats, sleeps, lives, plays and flies with his personnel. In no other branch of the Services does the doctor come into such contact with his personnel. He is constantly motivated in their interest. It is the duty of the Flight Surgeon to organize athletic teams, so that his organization may get the necessary amount of exercise. He supervises their periods of relaxation and sees to it that his pilots get the sufficient amount of rest. He watches their diet in an effort to keep it well balanced, properly cooked and palatable. He supplies his personnel with vitamin tablets when such adjunctive treatment is necessary.

An interesting personal sidelight on this phase of a Flight Surgeon's duties is given in a letter from a Lieutenant General, Air Corps, to his wife in which he informed her that she need not worry about his health, for every time he turned around, his Flight Surgeon was sticking a pill of some sort or another into his mouth. The Flight Surgeon supervises the sterilization of the drinking water in infected areas, and in the tropics prescribes the minimum amount of water necessary, as well as looking after the proper distribution of salt for the prevention of heat exhaustion. He looks after the sanitation of the camp, treats his personnel when ill or injured and is available immediately when his services are needed.

The Flight Surgeon is the confidant of the Commanding Officer and has entree to that oflicer directly. This liaison should be of the closest. Anything that aflfects the health or well being of the command is a proper subject of discussion between the Flight Surgeon and his Commanding Officer.

The Flight Surgeon is always on the "flying line" before the take-off on a mission, discussing with each pilot casually some matter of little moment all the while sizing up the pilot and air crew members, whom he knows intimately, to determine whether there is any deviation from the individual's known normal state. If he finds any change, investigation is immediately made privately with the individual and an evaluation of its significance is made. If it denotes inefficiency, recommendation is made to the Commanding Officer for the relief of the air crew members from that specific mission, for it is one of the Flight Surgeon's primary duties to see that any one who may jeopardize the success of a mission be replaced by one who is fit.

So it is seen that the Flight Surgeon touches the lives of his fighter flyers in almost every situation and if the storms of war are weathered safely, lasting intimate friendships are made, and the Flight Surgeon has assumed his valued place in the respect and affections of his personnel and has accomplished his mission.

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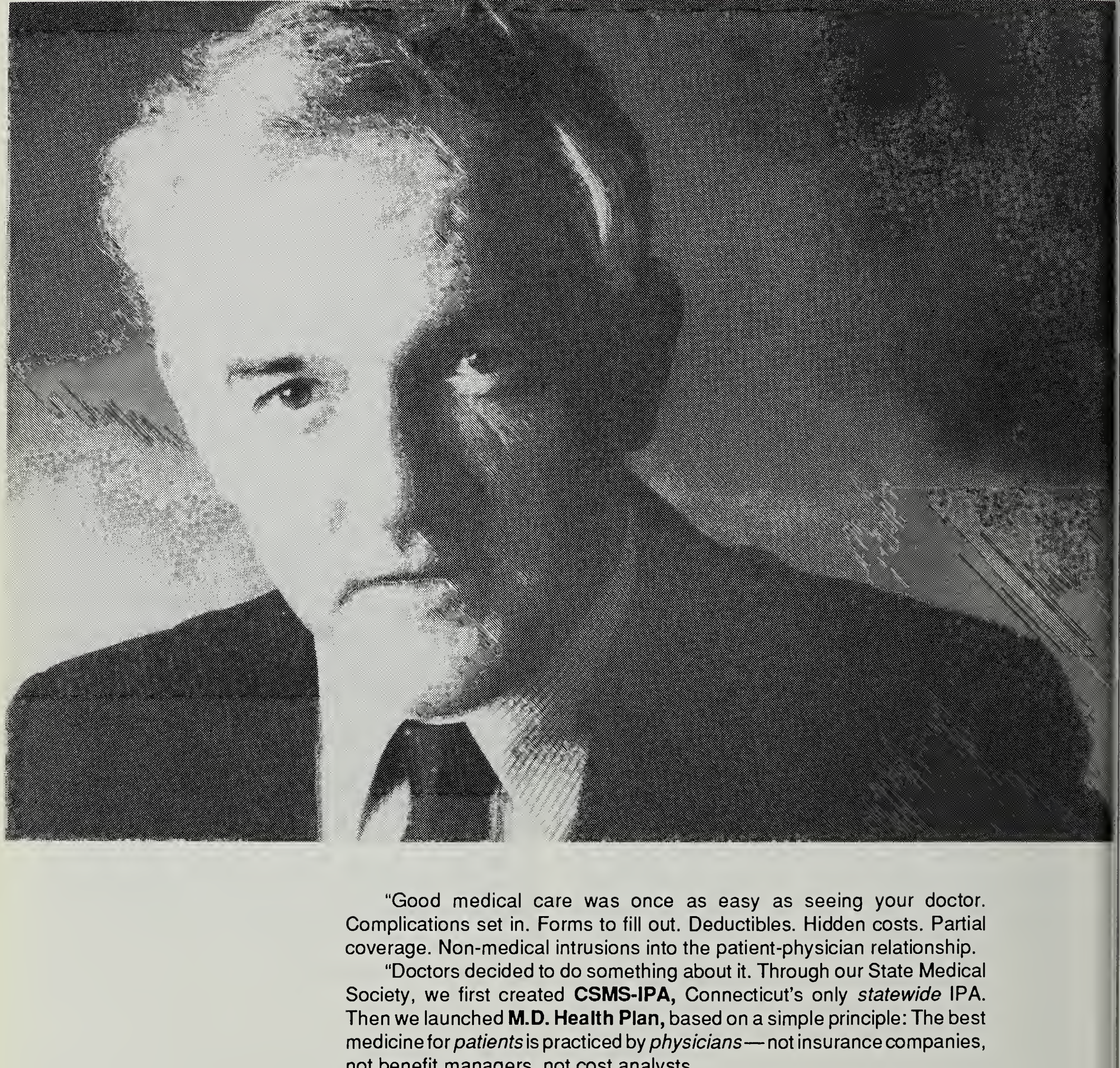

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"Inappropriate Treatment or Inappropriate Prevention?"

In a provocative paper in the *New England Journal of Medicine*, Phelps has suggested that we all may be misled by "flawed estimates" of the rates of "inappropriate" treatment.[1] Such rates are used to support practice guidelines, to profile physicians, even to perform preoperative screening. Kassirer,[2] in an accompanying editorial, discussed the large and growing industry that is developing the standards we will all be measured against. The standards (practice guidelines) are based on data derived from actual patients (outcomes research). Some bureaucracies, government or private, are rushing to use these guidelines "to enforce proper clinical decision making." But, suggests the editorial, "we have largely neglected to ask whether these tools are valid, worth the investment, and ready for wide-scale implementation." I commend his thoughtful analysis of this problem for your careful reading.

Meanwhile, the debate goes on as how to deal with the present cost of health care. How about examining the chief causes of the increasing costs?

•*Success.*—Human beings, like most animals, were designed to live until their procreative powers ended. But modern medicine permits survival to the mid-seventies on the average. More older people means more medical care. When a major illness affects an organ system it is often in someone who has another compromised organ system being maintained by treatment. More older people also means more neoplastic disease, more Alzheimer's, more fractured hips, more office visits, more hospital admissions, more nursing home care. In short, more cost.

•*Technology.*—Americans adore technology. It is often simpler for the patients, less invasive, more definitive in both diagnostic and therapeutic outcome. It makes some surgery more easily tolerated. It prolongs useful life. Frequently it relieves anxiety.

•*Access.*—Between 220 to 240 million of us (depending on who you believe) have this now. The total cost is obviously more now than when only 150 million did as in the early 1960s.

•*Inflation.*—This speaks for itself except to note that correcting the substandard salaries of the working poor in the hospital industry and necessary increases in salaries of health-care workers in short supply (nurses, radiation technicians, respiratory technicians, etc.) exceeded inflation. For that matter so did prices of medications and equipment.

•*Cost of doing business.*—Physician office overhead has risen from about 20% of gross income in the 1950s to over 50% on average in 1993. Liability insurance in the absence of significant tort reform, wide variability in paperwork and micromanagement by third parties, and the cost of people and things explains most of this increase.

•*Self-induced problems.*—Most important of all, perhaps a third of the cost of health care is in those illnesses that are "self-induced" or "caused by other people." Without them we could be spending less than 10% of GNP on health, if they could be reduced 20% we would save 1% of GNP. What are these?

a) Alcohol with its devastating tolls on the bodies and minds of the drinkers, its damage to the fetus (largest cause of mental retardation), accidents with cars, workplace accidents, fires, injury to innocent bystanders.

b) Smoking with its very large costs to the user (COPD, neoplasms), injury to innocent bystanders, fires.

c) Other addictive drugs and the violence used to acquire them.

d) Speeding and reckless driving not associated with drugs.

e) Violence caused by criminals, gangs, and respectable house owners with a gun in the house.

f) Sexual behavior which is rapidly making AIDS an epidemic heterosexual disease in a society where epidemiologic intervention is difficult at best.

g) Lack of helmet laws.

As we address how to contain the costs of health care let us keep our eyes on the causes of its rise. Let us hope that before we ration health care for those not involved in the issues of the last item we will take steps to curtail the causes therein listed. How to do this will be the subject of a subsequent commentary. If *you* have any suggestions please let me know.

1. Phelps CE: The Methodologic foundations of studies of appropriateness of medical care. 1993; 329:1241-5.
2. Kassirer JP: The quality of care and the quality of measuring it. 1993; 329:1263-5.

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American Medical Education: No One Does It Better

ROBERT U. MASSEY, M.D.

TO the question, "When did modern medical education begin in America," the answer might be, "1893, a century ago, when Johns Hopkins admitted its first class." At least the pattern was visible then: selective admissions after a bachelor's degree, coeducation, two years of laboratory science, two years of learning by doing on clinical services, postgraduate hospital work—all much the way it is now. With a few exceptions, a century later America's 126 medical schools, following Abraham Flexner's idea of medical education, adhere to the pattern, and are more alike than different.

Since 1979 the University of Connecticut School of Medicine has accepted a small number of European medical students each year to spend from three to nine months in research or clinical work. Many other medical schools in the United States do the same; several hundred students from Germany spend part of their clinical years in an American school. Nearly half of these men and women later enter academic medicine in Germany. A recent report by one of them (her research thesis) noted that almost all believe that American clinical education is superior to theirs at home, that clinical teachers here treat them as colleagues, love to teach, and are remarkably generous with their time.

The visiting students form lasting friendships with American students, and are impressed with how hard they work and how determined they are to master every detail of their clinical work. They believe some are less well prepared in the basic sciences. They are not surprised that few speak German, or any foreign language, but find it curious that not many have an interest in current events, history, literature, art, and music.

Though our faculties never tire of reworking the curriculum, medical education in the United States and Canada is quite simply the best in the world. The problem is with our first 16 years of general education.

We have history majors who are unsure about why or when the Western or Eastern Roman Empires declined and fell; they are uncertain about the decade of the American Civil War! American medical students rarely know who William Osler was, but German students do, although they know more about Rudolf Virchow. Most German students have had Greek, Latin, and speak English and French fluently. A few have even read F. Scott Fitzgerald novels, and most know *Tom Sawyer*. Of course they know Goethe and Schiller, but they know a fair amount of Shakespeare, too.

They have missed the liberating benefits of a one millimeter-deep multicultural education; their view of the world is, as a consequence, hopelessly Eurocentric. They have apparently been spared the blessings of postmodernism, at least they know Western Civ in depth.

As I review the transcripts of medical school applicants, I rarely discern a coherent course of study. Two years of a foreign language, now forgotten, a scattering of "humanities," courses on gender or race in society, a survey of Indian philosophy for those who could not distinguish Plato from Aristotle from William James, and one semester of the American novel, modern dance, or marketing. Sciences, most of which are repeated in medical school, pile up in the fourth year because, as one dean said, they know how to make A's in them.

None of this may matter. Most medical students become competent, caring physicians; some, world-class biomedical scientists. They come from families where important values of truth-telling, service, common sense, and self-discipline have been taught and lived. They needed some years to grow up in, and, despite the academic frivolity that few took seriously, they managed. When I try to make sense of these transcripts with their incoherent, even silly, lists of courses, I am saddened that hard-working parents spend thousands for this "college education." Sunk as we are in the Western rationalist tradition, medical school faculties might offer better liberal arts curriculum, beginning with Latin and medical history, and exchanging Celsus for Caesar! We could come up with a great list of novels and short stories for the clinical years.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

A child cries for food. We doctors must answer.

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This Month's Reading in Review

TIMOTHY B. NORBECK

- "It's the ratings, stupid, don't you know? They've got us putting more fuzz and wuzz on the air, cop-shop stuff, so as to compete not with other news programs but with entertainment programs—including those posing as news programs—for dead bodies, mayhem and lurid tales." CBS anchorman Dan Rather, on the state of TV news.

- "Hillary Rodham Clinton made $203,000 from her law practice last year. The median income of American doctors was $139,000 in 1991 (the most recent year figures are available). Guess who is accusing whom of making indecent sums of money?" Stephen Chapman, syndicated columnist.

- A new state-by-state ranking of children's health (age 19 and under) shows dramatic differences between states, with children in the Northeast and Midwest nearly 50% healthier than children in the Southeast....The rankings combine 14 factors assessing children's health at birth, their family environment and lifestyle influences and mortality....Connecticut tied with Iowa at No.8. ...North Dakota was first, followed by Vermont, Massachusetts and Minnesota (tied), Hawaii, Maine, and New Hampshire.

- Almost half a million women will die of breast cancer in this decade in the United States.

- A new study shows that the United States is the world's fastest-growing industrialized nation....Every hour, the population changes as follows: births (466), deaths (249), net immigration (101), net population (318), marriages (268), and divorces (136).

- According to a medical study, badminton causes more eye injuries than any other racquet sport....Last year 52% of eye injuries from racquet sports came from badminton, followed by tennis (24%), squash and racquetball (24%).

- According to a new study in the *New England Journal of Medicine*, two-thirds of those people who spend time in nursing homes are women. Some 13% of all women will spend at least five years in a nursing home versus 4% of men....The average cost for a year's stay is $25,000, and the number of nursing home residents has nearly tripled from the 500,000 back in 1964.

- Women are more likely than men to always wear a seat belt, by a 75% to 66% margin....Mandatory seat belt laws have a major impact on belt use....Only 42% of adults in states without belt laws say they always buckle up, compared to 73% of those in states with laws.

- Persons who do not usually wear seat belts experience 54% more hospital days than those who do wear seat belts.

- A majority (62%) of Americans feel great stress at least once or twice a week, and this proportion has not changed during the past five years....Younger adults are more likely than their older counterparts to feel great stress several times a week.

- Almost 50% of all deaths that are road-related happen on Saturday between the hours of 3 P.M. and midnight....The most deaths occur in August and October.

- Breakdown (Employee Benefit Research Institute) on how Americans obtain their health insurance:

  Through private employers—142.3 million (57.2%)
  Medicare—30.4 million (12.2%)
  Medicaid—19.3 million (7.8%)
  Policies purchased by individuals—17.6 million (7.1%)
  CHAMPUS (military dependents)—2.5 million (1.0%)
  No health insurance—36.6 million—(14.7%)

- *Only in America:* In Boynton Beach, Florida, the IRS did acknowledge that Harold Heine was dead but wrote him nevertheless asking that he send his current address within 10 days. The letter began: "Dear Harold Heine DECD (Deceased)." Mr. Heine died four years ago.

TIMOTHY B. NORBECK, Executive Director, The Connecticut State Medical Society.

1994 PDR® Now Available
Updated with New Drug Information
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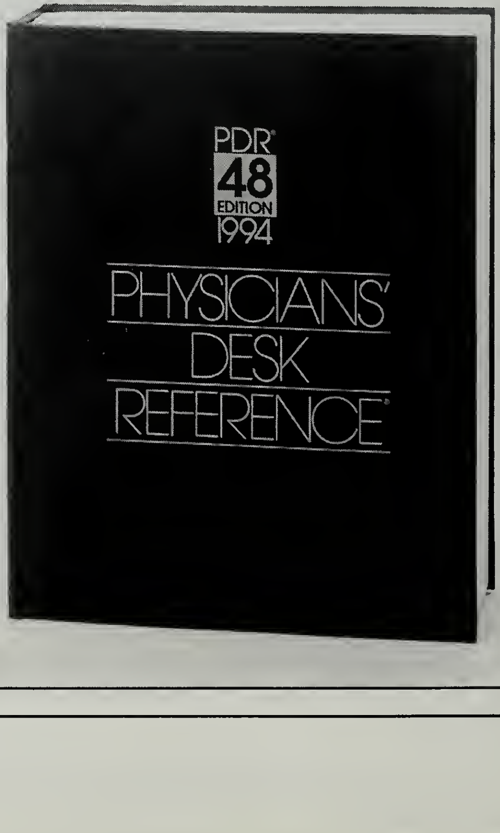
For nearly 50 years the PHYSICIANS' DESK REFERENCE® has been and remains *the* standard authoritative source of FDA-approved pharmaceutical information for health care professionals. It is the market leader and sets the standard by which all other drug references are measured. As the general public participates increasingly in their own health care, the *PDR*® has been entering more and more home libraries. And, through the holiday season, physicians, nurses, dentists, medical students and other health care workers are purchasing the *PDR* and presenting it as "a gift of health" to friends and families.

The 1994 PHYSICIANS' DESK REFERENCE (Medical Economics Data, $59.95), which is available in bookstores after November 15, 1993, updates all FDA-approved prescribing information, and also presents the latest information on new prescription drugs approved and introduced by the FDA in the past year. Examples include Imitrex, for the treatment of migraine attacks; Ambien tablets, a new class of non-benzodiazepine agent for insomnia; and Paxil, a new anti-depressant. The 1994 Edition also contains information on new indications for existing drugs. Estrace has been approved for use in treating osteoporosis; Marinol has a new indication for AIDS Complix, and Cardizem CD for angina.



In all, the new edition—the largest ever—has more than 2,800 drug listings. It has easy-to-use indexes that list drugs by manufacturer, generic and brand names, and type of use. You can look up any prescription drug and read about dosage, special warnings and precautions, when to use and when to avoid, side effects, overdosage, drug interactions, use in pregnancy, and more. Also included are diagnostic product listings and a directory of poison control centers with toll free numbers.

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From the Executive Director's Office

SUMMARY OF PROCEEDINGS
CSMS HOUSE OF DELEGATES — SEMI-ANNUAL MEETING
RAMADA INN, MERIDEN—NOVEMBER 17, 1993

Reports and Addresses

The House received reports, addresses and/or remarks from the President, the Council, the AMA Delegation, the Executive Director, Connecticut Medical Political Action Committee (COMPAC), Connecticut Medical Management, Inc., M.D. Health Plan, and others.

PRINCIPAL ACTIONS TAKEN

(a) *Report of the President:* Howard J. Wetstone, M.D., Hartford. The House voted to accept the report of the President. His report included comments on the building renovation, commendation of the progress being made by the Health Care Reform Task Force in establishing CSMS policy on the issue. He also commended Drs. Zanker and Hollister for heading a committee that developed a public relations program entitled "Action Plan for Public Education Campaign, and praised the Council and CSMS committees for their efforts. The full text of Dr. Wetstone's report is published as the President's Page in this issue of *Connecticut Medicine.*

Honorary Degree in Medicine: On behalf of the Council, and in accordance with the CSMS bylaws, Article VII, Section 1, Par. 6—Honorary Degrees, "The Council may recommend to the House of Delegates the bestowal of an Honorary Degree in Medicine upon any person, not a physician, distinguished in the science of medicine or for contribution to human welfare," Dr. Wetstone recommended to the House, and the House approved, the bestowal of an Honorary Degree in Medicine upon Timothy B. Norbeck, CSMS Executive Director," for his achievements in the service of the profession of medicine."

(b) *Report of the Council:* Joseph C. Czarsty, M.D., Oakville. The House voted to accept the report of the Chairman of the Council, which reviewed the activities of the Council since the last meeting of the House of Delegates. Minutes of the interim Council meetings have already been published in *Connecticut Medicine.* Special emphasis was given to the reports of CPRO, M.D. Health Plan and CMMI/CMIC. Also reported on was a legislative update and a plan of action for a public education campaign. The Council also submitted a budget for 1994 and the action taken on the Council's recommendation appears elsewhere in this summary.

(c) *Report of AMA Delegation:* Edward A. Kamens, M.D., Fairfield. The House voted to accept the report of the AMA Delegation. The report contained the principal actions taken at the 1993 Annual Meeting of the AMA House of Delegates, which included information on Harnessing Market Forces in Medical Pricing, Health Care Reform, Required Benefits Packages, Sexual Orientation Discrimination, Repeal of CLIA, Enterprise Liability, Increasing the Availability of Primary Care, National Practitioner Data Bank, AMA Dues (increased by $20 for 1994), and AMAs National Campaign Against Family Violence. The House agenda contained 117 reports and 229 resolutions. Dr. Robert McAfee of Maine, the New England Delegation candidate, was elected President-Elect of the AMA. The First Lady, Hillary Rodham Clinton, addressed an overflow audience at the Opening Session.

(d) *Report of the Executive Director:* Mr. Timothy B. Norbeck, New Haven. The House voted to accept the report of the Executive Director, which appears elsewhere in this issue of *Connecticut Medicine.*

(e) *Connecticut Medical Political Action Committee (COMPAC):* Roger S. Beck, M.D., Wethersfield, Chairman of the Connecticut Medical Political Action Committee, gave an update on the current status of COMPAC. He reported that this is a time of revolutionary change—a critical time for physicians due to the healthcare reform plan that has been presented to Congress. He stated that COMPAC has a clear goal—to elect, support, and influence those legislators who share the physicians' concern for a good health delivery system that considers patients' needs first and foremost. He reported that we have a responsibility to patients and to the medical profession, but that no one person can do the job alone and stated that contributions to COMPAC will help make the difference.

(f) *Report on Connecticut Medical Insurance Company (CMIC):* Mehdi S. Eslami, M.D., Chairman of the Connecticut Medical Management Incorporated, (CMMI) gave an update on the activities of CMIC. He announced that after four years of decreased or unchanged premiums, CMIC will implement a modest 6.5% increase for 1994. It was reported that 90% of CMIC members will participate in the third consecutive Policyholders' dividend, which for the majority of members will be greater than the rate increase for 1994.

In response to a member survey, with a 45% response rate, 99% of members would recommend CMIC to their physician colleagues, 97% of members believe that CMICs service and insurance programs are responsive to member's practice needs. The report stated that CMIC continues to be the leading insurer of physicians in Connecticut.

At the request of Dr. Eslami, the House held a "moment of silence" in memory of Kevin V. Dowling, M.D., Hartford, who was president of CMIC. Dr. Eslami reported that Sultan Ahamed, M.D. was elected President of CMIC, Joseph S. Sadowski, M.D. elected Chairman of the Finance Committee and Neil H. Brooks, M.D. elected to the Board of Trustees.

(g) *M.D. Health Plan (MDHP):* Vincent J. Catrini, M.D., Middletown, Chairman of the Board of Directors of MDHP reported on health care reform and the concept of managed care. It was stated that the positioning of the HMO, to be ready for such reforms, was due neither to luck or Divine Providence and that 1993 was a year of judicious planning and preparation on the part of the working Boards, Committees and senior management.

M.D. Health Plan was identified as one of the three selections for the State of Connecticut's Employee Health Benefits Plan. By the end of the open enrollment, MDHP had captured close to 50,000 employees, dependents and retirees. This number representing approximately one third of the eligible total was many more than MDHP had forecast or anticipated by anyone in the State and brought total enrollment in all MDHPs benefit plans to 115,000. M.D. Health Plan is now the second largest HMO in Connecticut. To keep up with this growth and to improve provider relations and claims processing, internal changes were made as to equipment and personnel. Dr. Catrini reported that they have been approached by physicians and Medical Associations from many states around the nation to advise them on creating a physician-owned HMO in their respective states.

(h) *1994 Budget*: The House voted to approve the budget for 1994, as prepared and recommended by the Council, and that the dues remain at $300.00. The last dues increase of $25 was in 1988.

(i) *Report of Task Force on State Health Reform:* Drs. Sultan Ahamed and Roger Beck reported that the CSMS Council had adopted an ambitious legislative plan to prepare CSMS for state health care reform, which was presented to the House of Delegates at the 1992 Semi-Annual meeting. They gave a progress report on the activities of the Task Force since the last meeting. On the advice of an actuarial firm, minor amendments have been made in the Statement of the Health Care Reform Task Force, which was presented previously. The House voted that the Council instruct the Task Force that it has the flexibility in changing the details of the report made to the House.

(j) *Resolution on Fairness for Physicians:* With minor amendment, it was voted to approve the following resolution which was introduced by the Fairfield County Medical Association:

"Resolved, that the Connecticut State Medical Society give high priority to seeking passage of legislation which would require all health care plans to accept a physician or hospital on its provider panel as long as the physician or hospital met the published credentialing criteria of the health plan, and agreed to abide by the plan's policies and procedures."

(k) Guest Speaker—Edward R. Annis, M.D., Miami, Florida. Dr. Annis, former President of the AMA and the World Medical Association and presently Chairman of the Florida Medical Association Speakers' Bureau, gave a very interesting report on the history of government intervention in medicine since 1960 and spoke about the effects of socio-economic factors on the cost of medical care and on health care reform.

AWARDS

CSMS Past Service Awards to Officers and Councilors

Councilors

Fairfield County
Dickerman Hollister, Jr., M.D.,
Greenwich—Associate Councilor, 1988-1990
Councilor, 1990-1993
Hartford County
Brendan M. Fox, M.D.,
Hartford—Associate Councilor, 1991-1993
Wayne F. Hosking, M.D.,
West Hartford—Associate Councilor, 1991-1993
New London County
Joseph P. Zeppieri, M.D.,
New London—Associate Councilor, 1988-1989
Councilor, 1989-1993

Address of the Executive Director

CSMS House of Delegates—November 17, 1993

TIMOTHY B. NORBECK

RELATIVE to our discussions, deliberations, and concerns about health system reform, I am reminded of the fellow who reported seeing a sign outside a veterinarian's office. It read "Veterinarian/Taxidermist—Either way, you get your dog back!" Obviously, it makes a great deal of difference to us how we get our dog back.

My discussions with your colleagues in Connecticut indicate to me that while they support the concept of health system reform and recognize the need to slow the rate of growth of health care costs, they are also very much concerned about the potential for a greater bureaucracy and more micromanagement of their patients than already exists today. And maintaining the present intrusions between physicians and their patients is unacceptable.

Compounding the problem is that *bona fid*e questions raised about the Clinton plan seem to be interpreted in Washington as an effort to stonewall reform. That is not the aim of physicians; helping to craft better reform is. Of course, President Clinton and Hillary Rodham Clinton are to be commended for delivering on their promise to elevate the status of the debate; we must do what we can to help shape the final result so that it is beneficial to your patients. For there is nothing wrong with the principles they advocate; but how they are applied—there's the rub.

As hectic as things are today, there was a time not so long ago when things were relatively calm. I remember Dr. Arthur Farris who would visit us every year as a delegate from Vermont. When we asked him a few years ago to give a five-minute talk on what was going on in his state, he said: "Thank goodness you haven't given me 15 minutes or I would have had to go back to the Civil War." With the reform efforts going on in the Green Mountain State today, and not so well for medicine, I understand, he could probably talk for several hours. Speaking of New England, we are all aware of the New Hampshire motto which boldly states on its license plates: "Live free or die." I saw a bumper sticker the other day on a Massachusetts car that proclaimed: "Live free or in Massachusetts." It must have been a physician's car.

As George Bernard Shaw put it: "Democracy is a device that ensures we shall be governed no better than we deserve." Despite its weaknesses, there is still that all important opportunity to be heard on health reform, and we intend to exercise that right to its fullest.

Don't be misled and think that health reform is a done deal and that it is a cause beyond your ability to influence. The Clintons have developed a plan and the Congress will study and debate it for another nine months, most likely, before a vote is taken. It may even go into 1995. Physicians must be involved in this debate, because to a considerable extent, the health care of your patients and your livelihoods depend on it. You heard Dr. Wetstone's comments over lunch on the extensive CSMS activities in this regard and I must interject at this point to say that the physicians involved in this exhaustive process deserve a great deal of credit. Your officers and staff will do what we can but you must also be out there at the forums and meetings representing your patients' interests, along with yours, in treating them effectively. Legislators, statewide and nationally, want to know what health reform is going to mean to patients and who can tell them better than those who provide the care—you and your colleagues.

Who, better than physicians, are their patients' best advocates? "We are here on earth to help others," poet W.H. Auden said 30 years ago, "but what the others are here for I cannot say."

The issue of health reform is such an important subject that it absolutely requires a very long, deliberate, and exhaustive debate. There is no issue, short of a national defense crisis perhaps, that is so important to Americans. Because if we haven't got the time to do it right, will we ever have the time to do it over?

Time is on our side in this debate. As Churchill said "I am an optimist; it doesn't seem too much use being anything else." One of the positives over the past six months and there are a few, is a much better media and public recognition of why health care costs are rising. Prior to the president's placing this issue on the American agenda, few, if any, media persons were talking about life styles, disease prevention, low-birth-weight infants and their effect on American mortality and health-care costs. And much more will be said and understood in the next nine months or so.

There is also a growing recognition in Congress of social pathologies and how they impact on health-care costs. In fact, Senate Finance Committee chairman Daniel Patrick Moynihan said the other day at a hearing, along with some of his colleagues, that "fixing our nation's health care problems might not be worth the trouble if nothing is done to cure our social ills that increase medical costs." As a columnist said after that hearing: "Why do such groups as Asian Americans and Mormons have longer life spans? Because they get much better medical care than everyone else? Or because they do not kill themselves off with drugs, alcohol, and reckless behavior?"

When you think about it, how can we expect to maintain a viable civilization when we have 12-year-olds having babies, 15 year olds killing each other, 17-year-olds dying of AIDS, and 18-year-olds getting diplomas they can't read?"

Whether one is a Democrat or Republican, one of the great ironies in all this talk of health-system reform is that at the same time that Vice President Al Gore is publicly ridiculing the federal bureaucracy and its confusing and complex regulations—and receiving plaudits for such comments—that some would entrust the management of one-seventh of the national economy, which includes the well-being and virtual lives of all Americans, to that very same bureaucracy. As P.J. O'Rourke noted recently: "Giving money and power to government is like giving whiskey and car keys to a teenage dropout." It should be noted that all the polls show that many more Americans are satisfied with their health-care than with their government.

According to the National Performance Review report, the average American believes that the government wastes 48 cents of every tax dollar. In 1963 the public opinion polls showed that 76% trusted the federal government all or most of the time. Today just 21% do.

There is a considerable public education job which remains to be done. A recent Kaiser Family Foundation and Harvard School of Public Health poll demonstrated how split the American public is on health-care spending. While 40% think that we spend too much, 41% believe that we spend too little!

And speaking of financing, we all can appreciate President Clinton's dilemma in trying to get a grip on rising health care costs. It's something that we have to do, but how without jeopardizing patient care? How can we possibly save $124 billion in Medicare over the next five years? Medicare and our senior citizens can't possibly absorb those cuts nor can the physicians and hospitals who treat them. There is an assumption in the Health Plan that Medicare expenditures will be held to inflation plus population growth while benefits expand and the elderly grow older. It seems to me, and it has been said by others, that an aging society which will require more and better health care from a burgeoning industry, which will be developing more and better cures, will accomplish just the opposite.

Some in Congress have asked how we can hope to calculate future health-care costs with any real degree of confidence with the expected advent of new diseases and evolution of new technologies and medicine.

As you know, one of the favorite media tactics is to compare physicians' incomes with the "average person." Just who is the average person? Is it someone with a high school diploma, undergraduate degree, or someone with four years of graduate training—followed by three years or more of special training? Does the average person pay malpractice insurance or have employees and rising office overhead expenses?

Media critics like to suggest that public opinion is solidly aligned against physicians. There are many interesting exceptions, however. I remember seeing a front page article in the Wall Street Journal about eight months ago about a Vail, Colorado, orthopedic surgeon named Steadman who was "making a million dollars a year treating ski injuries" and who was depicted somewhat as a highwayman. Apparently he worked many long days, nights, and weekends in repairing broken bodies—just like so many of you do. Several weeks later, one letter to the editor caught my attention. It read: "Three cheers for Dr. Steadman's excellence. I would pay someone $1 million a year to improve the quality of my life. Better him than the lawyer who sues him, the politicians who regulate him, or the nasty critics who attack him."

AMA is constantly criticized because only 41% of the nation's physicians are members of the organization, even though through its House of Delegates every facet of medicine enjoys some kind of representation. When AMA is mentioned in an article on health reform, and it usually is in a negative way, the reporter invariably states that the AMA speaks for only 41% of the physicians. Yet when the organized labor position is mentioned or the posture taken by the ANA (American Nurses Association), that writer does not state the respective 16% and 10% shares of membership enjoyed by their organizations.

As the health reform debate broadens and intensifies, there is no question that critics and observers will point to our high per capita medical costs in Connecticut as justification in imposing stringent controls. As the co-chair of the Public Health Committee, Senator Ken Przybysz, said to an AARP meeting at which I was also a panelist, we spent more money per family on health-care costs in Connecticut in 1990 than any other state. Mr. Przybysz was quoted at last weeks' hearing of the Public Health Committee referring to some surveys indicating that Connecticut has the highest health-care costs in the country. Others will refer to surveys which show our per capita health care spending in 1991 as the fourth highest overall, behind only Massachusetts, New York, and Pennsylvania. Those figures and others will be thrown in our faces often in the coming months.

Now I am not trying to minimize the effects of rising health-care costs on Connecticut businesses and citizens, nor would I deny that there is a need for us to work toward limiting the overall growth rate of those costs—but there are some very good reasons why our costs in Connecticut are higher than in almost all other states.

We have more physicians on a per capita basis and our access to care is second to none—as is our support for public health-care spending. Connecticut has a full percentage point more elderly than the national average. According to the State Insurance Department, in 1992 we had fewer uninsured people than in any other state including Hawaii, which reportedly has universal coverage.

Although physicians will not notice it in their reimbursements, our Medicaid program, in terms of benefits and eligibility, is one of the five most generous programs in America—as is our ConnPace, or prescription drug program for our senior citizens. Only Maryland has more mandated benefits than exist in Connecticut. And our smoking and alcohol consumption, and number of cancer cases are higher than in many other states.

We must do our best to contain costs where we can without jeopardizing patient health, but in the interest of fairness, people must understand that there are valid reasons for increased health expenditures in Connecticut. One final factor is that despite its economic plight of late, Connecticut still leads the nation in per capita income—and has a high cost of living—always major factors in a state or country's health care expenditures. In fact, and this has been overlooked, at 8% of per capita income, Connecticut spends less on health care than any state in the union save New Jersey.

I am concerned, and I think that we all should be, that funding for research in age-related illnesses through the National Institutes of Health is only $700 million in 1993. That's less than 3/10 of 1% of the $340 billion spent on caring for older Americans.

In my judgment, we need to spend more for research on Alzheimer's disease, cardiovascular disease, stroke, osteoporosis, arthritis, and hearing and vision problems. Some 280,000 Americans suffer hip fractures each year. Reducing that incidence by 20% through the prevention of falls and osteoporosis, experts tell us, we could save almost $30 billion in health-care costs by the year 2000.

Researchers further tell us that by delaying the onset of Alzheimer's by five years, we could cut the incidence in half, saving $47 billion annually. Unless we experience some major breakthrough, the number of Alzheimer's victims will escalate dangerously to levels well beyond our present four million. Perhaps we should be a voice of support for such research.

I'm sure that it is a concern of everybody in this room that the costs of whatever health reform is enacted will greatly exceed the estimates. And when that happens, guess who will get the blame? We know that the track record of governmental actuaries leaves a great deal to be desired. Remember the estimates for Medicare back in 1965? Actuaries said the program would cost eight billion dollars by 1990. The actual costs: $106 billion. Medicaid was going to cost one billion dollars every year, but it cost $76 billion last year. And how about the End-Stage Renal Disease Program instituted in 1972? It was estimated to cost $35 to $75 million the first year, but actual expenditures were $229 million with 11,000 recipients. The beneficiaries now number 165,000 and will reach 300,000 soon. The present costs: $6.5 billion. At least three mistakes were made with Medicare. Government actuaries misjudged the demographics, they misjudged the scope of the technological revolution, and they misjudged the public's desire for these services. As we work with legislators on health reform, both statewide and nationally, we must endeavor to remind them of these important things to be factored into the estimates. Let us hope that the costs of health reform do not follow that sorry history.

In one of his most famously cruel gibes, English writer Evelyn Waugh remarked on his friend Randolph Churchill's loss of a lung that turned out not to be cancerous. "It was a typical triumph of modern science," he said cynically, "to find the only part of Randolph that was not malignant and remove it." As we all gear up for health reform and attempt to maintain and strengthen a role for physicians in that process, we must do everything possible to avoid removing choice and quality in favor of bureaucracy and price controls.

There are others, both Democrats and Republicans, who share that sentiment. Physicians who fear that alliances may become too powerful can take heart by what some Democratic senators on the Labor and Resources Committee said at a hearing less than one month ago. They said they "feared that alliances would become monopolistic bureaucracies that stifle competition." Even Ira Magaziner acknowledged that "they could turn into huge bureaucracies if we aren't careful." If alliances come into being, and they are far from certain at this point, there is a recognition factor in both political parties that it is a problem area that must be addressed. The last thing we need is more strangers at the bedside.

These times, perhaps, are more challenging than any others that we have ever faced. Past and present actions of this body, and your continued participation—and that of your colleagues will ensure the necessary and continued strong CSMS presence in health reform activities. As Emerson said, "This time is as good as any other, if we know what to do with it."

CSMS Bicentennial

Neil Sedaka

Dr. and Mrs. Sultan Ahamed with Neil Sedaka (Norwich).

A view of the tables and stage from the dance floor.

Dr. Craig Czarsty, Master of Ceremonies and Chairman of CSMS Bicentennial Committee

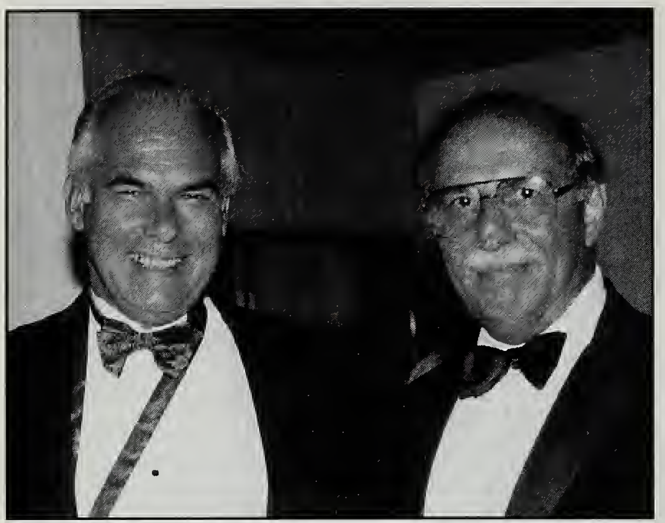
Dorsey Brothers Band

Dr. Craig Czarsty, Chairman of CSMS Bicentennial Committee and Dr. Carl Hinz, Chairman of HCMS Bicentennial Committee

Neil Sedaka

Neil Sedaka; Dickerman Hollister, Jr., M.D., President FCMA; Alfred Herzog, M.D., President HCMA; Sultan Ahamed, M.D., President of CSMS.

Dr. Robert Linden (Niantic) obtaining an autograph on an old 45rpm single

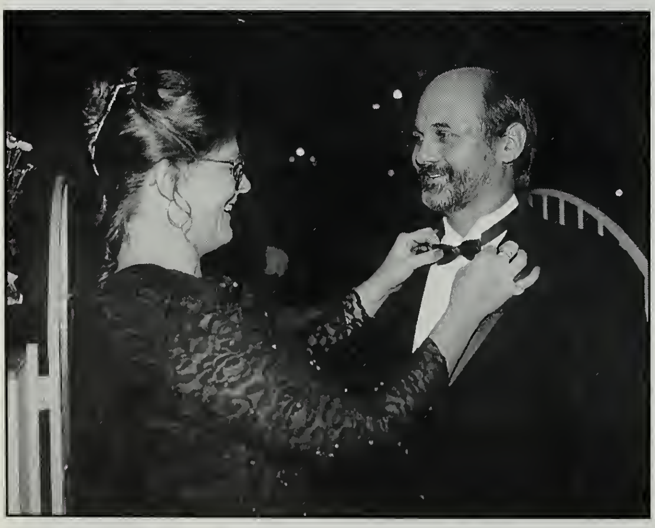


Dr. William Callahan, President of Massachusetts Medical Society and Dr. Mehdi Eslami (Waterbury).

Dr. and Mrs. Sidney Cramer (Hartford).

Before dinner reception by the pool.

Dr. Sultan Ahamed (Norwich); Ann Marie Deren; Dr. Michael Deren (New London); Dr. John Bigos (New London); Kathy Lucus.



Dr. and Mrs. Arthur Blake (Higganum).

Dr. and Mrs. Thomas Lesnik (Norwich) and Dr. and Mrs. Peter Rosenberg (Norwich).

COMMITTEE SERVICE QUESTIONNAIRE

Connecticut State Medical Society

Early in 1994 the Councilors from the eight constituent county medical associations assume the responsibility of selecting members of the Society to participate in the various activities of the Society, listed below. In making these selections it is of importance to choose physicians who are not only willing and able to serve but also who are known to have an interest in the work of the group to which they may be assigned. In order to enable this office to furnish the Councilors with a compilation of those who desire to be considered for committee service, all members are asked to indicate by number in order of preference (not more than three) opposite your choice in the questionnaire below and return same to the:

Executive Director's Office
160 St. Ronan Street
New Haven, CT 06511

Your cooperation will be appreciated.

Medical Education

☐ Committee on Continuing Medical Education

Medical Economics

☐ Committee on Insurance

Professional Relations

☐ Committee on Ethical and Judicial Affairs

Public Affairs and Communication

☐ Editorial Committee on *Connecticut Medicine*
☐ Committee on Legislation
☐ Committee on Public Affairs

Scientific and Socio-Environmental Medicine

☐ Committee on Emergency Medical Services
☐ Cancer Coordinating Committee
☐ Committee on Physican Health
☐ Committee on Maternal Morbidity and Mortality
☐ Committee on Medical Aspects of Sports
☐ Committee on Organ and Tissue Transfers
☐ Committee to Study Perinatal Morbidity and Mortality
☐ Committee on Public Health
☐ Committee on Statewide Medical Planning
☐ Committee on Geriatrics
☐ Committee on Alcohol and Other Drug Dependency

Representatives and Advisors

☐ Committee on Allied Health
☐ Committee on Medicare
☐ Liaison Committee with Connecticut Pharmaceutical Association
☐ Liaison Committee with State Department of Income Maintenance and Third Party Payers
☐ Representatives to Connecticut Advisory School Health Council
☐ Delegates to Connecticut Public Health Association, Inc.
☐ Delegates to Connecticut Nutrition Council

Please return by January 30, 1994

Name: ______________________________ M.D.
(Please Print)

Office Address: ______________________________

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CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

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Southeastern Connecticut: Busy Walk-in center in Norwich, CT seeks full-time or part-time physician. General medicine, occupational medicine, minor surgery and urgent care experience required. Very pleasant working environment, competative salary and benefits. No night call. Send resume to P.O. Box 437, Plainfield, CT 06374. Telephone: (203) 564-6542.

Offering the best of both worlds, for Full-time physician. Happiness in your professional life - time for your private life. Busy ambulatory care center. Wonderful staff, good patient population.

Great hours, benefits and competitive salary with profit sharing. If you are a good primary care doctor, we are interested in you. Contact Dr. Thomas Kandell/Dr. Ronald Falit/Med-Help Medical Center, P.O. Box 1120, Bristol, CT 06010. (203) 584-8900.

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North Central CT: Anesthesiologist to join free-standing, state of the art ambulatory surgical center. Good lifestyle. Salaried position with superior benefits. Reply to: Anesthesia, P.O. Box 351, Somers, CT 06071.

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Full-time position is available to practice as a Flight Surgeon. Must be a graduate of Naval, Army or Air Force School of Medicine. FAA Examiner—Classes I, II or III necessary. Consultant in Aviation Medicine; also Corporate Designation. Please direct inquiries to James E. Crane, BS, MD, DAS; 666 Glenbrook Road, Stamford, CT 06906. Telephone: (203) 322-2323.

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General Practitioner wishes to share practice east of the Connecticut River. Connecticut License. Please respond to: CSMS c/o GP/JM.

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BC/BE Internist w/wo subspecialty to join three primary care physicians in New Haven. Academic teaching opportunities. Initial salary with the hope of partnership. Send CV or call: Wayne S. Warren, M.D., 1308 Chapel Street, New Haven, CT 06511. Phone: (203) 865-5111.

Florida, Fort Lauderdale. Excellent opportunity private practice managed HMO setting. Seek Board certified Internist or Family Practitioner. Full-time office position. Excellent Compensation to right candidate. Send CV to SCMC, 3601 W. Commercial Boulevard, Fort Lauderdale, FL 33309 or call Mr. Jackson at (305) 486-6100.

Community Health Center in Hartford, CT seeks Internist. Benefits package, loan repayment program. Please send CV or call: Usha Reddy, M.D., Charter Oak Terrace/Rice Heights Health Center, 81 Overlook Terrace, Hartford, CT 06106. Phone: (203) 236-0857.

INTERNAL MEDICINE—GERIATRICS

Excellent full or part-time opportunity exists at Yale University affiliated VA Medical Center. Position involves complex patient care in an extended care setting and teaching responsibilities and offers opportunity of clinical appointment at Yale. Malpractice coverage is provided. Salary is commensurate with education and experience. Outstanding benefit and retirement package. Please respond to Margaret Drickamer, M.D., VA Medical Center, 950 Campbell Avenue, West Haven, CT 06516. Telephone: (203) 937-3871. VA is an Equal Opportunity Employer.

MEDICAL DIRECTOR

Medical Director: Full-time position at Connecticut based subacute facility for BC/BE internists. Physician will join existing professional service component, made up of physicians of pulmonary disease, physical medicine and psychiatry, as a general practitioner treating patients with TBI, chronic respiratory illnesses, acute illnesses as well as providing rehabilitative services. The organization's mission is providing uncompromised quality care with continuity of care guaranteed by an inhouse clinical staff. In keeping in sync with the current trends of shortened hospital stays and the proposed health care reforms, this organization's focus is on providing a subacute environment as a viable and effective answer. Please send curriculum vitae to Donna R. McCarty, J. Morrissey & Company, 50 Columbus Boulevard, Hartford, CT 06106-1910, (203) 246-9000.

OB/GYN

Our group of three men and two women is looking to add an additional partner in the summer of 1994. Office consists of large addition on 1750 home with six fireplaces on two acres. Hospital has new LDRP unit opening January, 1994. Practice offers competitive salary and benefits, including health insurance, malpractice insurance, retirement program, seven weeks vacation plus meetings per year, and full and equal partnership in only one year. Direct inquires and CV to Robert E. Crootof, M.D., 17 Case Street, Norwich, CT 06360. Telephone: (203) 886-2461.

Community Health Center in Hartford, CT seeks OB-GYN physician. Benefits package, loan repayment program. Please send CV or call: Usha Reddy, M.D., Charter Oak Terrace/Rice Heights Center, 81 Overlook Terrace, Hartford, CT 06106. Phone: (203) 236-0857.

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BC/BE pediatrician to replace relocating member of a two-person practice in south central Connecticut. Position available July 1, 1994. Competitive salary first year, followed by opportunity for partnership. Excellent cross-coverage. Preference given to university-trained U.S. medical school graduate. Please send CV to: CSMS c/o PD/DG.

Pediatrician: BC/BE pediatrician. Pediatrician needed to join a 5 Pediatric group in southeastern Connecticut. Large new office, unique call system. Full time or Part time. Contact Gales Ferry Pediatric Group at; P.O. Box 608, Gales Ferry, CT 06335, our phone is (203) 464-7248.

Community Health Center in Hartford, CT seeks Pediatrician physician. Benefits package, loan repayment program. Please send CV or call: Usha Reddy, M.D., Charter Oak Terrace/Rice Heights Health Center, 81 Overlook Terrace, Hartford, CT 06106. Phone: (203) 236-0857.

Exceptional opportunity to join a pediatric practice of four Board Certified pediatricians. Located in shoreline community, 5 miles from Yale-New Haven Medical Center, our chief hospital affiliation.. Salary $110,000.00/year. Malpractice Insurance included. Buy-in option also available. Call: 1-203-248-4846, any evening after 8:00 P.M.

Three pediatricians seeking BC/BE pediatrician. Pleasant, busy practice. Rewarding family-life and schools. "Quiet corner" of state 30 minutes east of Hartford; two universities; new hospital construction completed. Please respond to: CSMS c/o PD/RK.

Exceptional pediatric practice opportunity in a beautiful New England town. Enjoy small town charm while living between New York City and Boston. This booming single doctor practice in Norwich, CT has a full time nurse practitioner and shares call with six physicians. Financial package including competitive salary, excellent benefits and malpractice insurance. Call (203) 886-5130 for Mary Eslick, M.D.

PRIMARY CARE

Full or part time position open in a busy Primary/Ambulatory office in Hamden, CT. X-ray and Physical Therapy on premises. Flexible hours. Call 281-4055 or visit at 2340 Whitney Avenue, Hamden, CT.

PULMONARY / CRITICAL CARE

ABIM-certified, Board eligible in Pulmonary/Critical Care, university trained, skilled at all diagnostic procedures (laser bronchoscopy included) seeks position in Greenwich, Westport, Enfield or other locations. Hard-working, personable. Please leave message for Dr. Fink at 718-796-1816 to arrange interviews. C.V. letters of recommendations available upon request.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

FAMILY PRACTICE

Available October 1, 1993. Age 73. Licensed in Connecticut and Massachusetts. Passed National Boards. American Board Certified. M.D. at Faculty of Medicine/University of Zurich in Switzerland. Internship at New York City Hospital. Residency at Meriden-Wallingford Hospital. Extensive medical-in clinic type experience. Thirty-six years medical/family practice and hospital experience. Please respond to: Harold Gregory Plakins, M.D., 180 Longhill Road, Wallingford, CT 06492.

GASTROENTEROLOGY

Available July 1994. Age 30. Licensed in New York. Passed National Boards. American Board Certified. M.D. at New York School of Medicine. Internship and Residency at Mount Sinai Hospital. Would like to join a group practice in Connecticut. Please respond to: CSMS c/o GA/MR.

INTERNAL MEDICINE

Available July 1994. Age 31. Licensed in Connecticut. Passed National Boards. M.D. at New York College of Osteopathic Medicine. Internship at Massapeaua General Hospital. Residency at Norwalk Hospital—Yale School of Medicine. Would like to join a group, associates or institutional practice in Connecticut. Interests in Cardiology, Pulmonary Medicine and Sports Medicine. Please respond to: CSMS c/o IM/MS.

Available July 1994. Age 41. Licensed in Maryland. Passed National Boards. American Board eligible. M.D. at Pathpulra Medical College. Internship and Residency at Prince George's Hospital Center. Looking for J-V Visa waver program/sponsorship. Would like to join a solo or group practice in a small community in Connecticut. Please respond to: Gurmej S. Dhillon, M.D., 6023 Springhill Drive, #301, Greenbelt, MD 20770.

INTERNAL MEDICINE/CARDIOLOGY

Available immediately. Age 36. Board Certified Cardiologist seeking to provide practice coverage. Available to cover weekends or to see office patients on weekday evenings for Internal Medicine or Non-invasive Cardiology practice. American born and trained. Excellent references will be provided. Please respond to: CSMS c/o IM/KS.

ORTHOPEDICS

Available July 1, 1994. Age 45. Licensed in New York. Passed National Boards. American Board certified. M.D. at Downstate Medical School. Internship and Residency at Kings County Hospital. Would like to join a practice in Connecticut. Please respond to: Harvey Manes, M.D., 20 Treeview Avenue, Melville, NY 11747.

PEDIATRICS

Available July 1994. Age 39. Licensed in Pennsylvania. Passed National Boards. American Board certified. M.D. at F.M.G.E.M.S. Internship at H.P. Medical College in India. Residency at Beth Israel Medical Center. Would prefer area with good schools - hospital based practice. Would like to join a group practice in a medium size community in Connecticut. Please respond to: Radmika Malmotra, M.D., 353 East 17th Street, Apt. 5F, New York City, NY 10003.

PAID CLASSIFIED ADVERTISING

All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

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Connecticut Medicine

Connecticut State Medical Journal

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